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ORNITHOLOGICAL CONDITIONS IN NORTHEASTERN ILLINOIS, WITH NOTES ON SOME WINTER BIRDS.

BY JOHN F. FERRY.

IN THE extreme northeastern corner of Illinois lies a region of unusual interest to the ornithologist. Between the years 1853 and 1873 it was thoroughly explored by Robt. Kennicott, E. W. Nelson, and F. T. Jencks, as well as by resident ornithologists, and it has furnished many an interesting bird note for northern Illinois. Of late years it has been almost totally ignored, possibly through the natural supposition that the rapid settlement of the surrounding country had completely changed its character. As a matter of fact, it remains to-day essentially in its primitive condition. The cause is obvious; the land is practically worthless save for one purpose, that of manufacturing sites. In all probability many years will elapse before the thriving industries of Waukegan, the county seat immediately south, will occupy the whole region. Two causes, one for the better, the other for the worse, have made such changes as now exist. The one is the marked improvement of the land through the planting of trees, the other is the partial draining of the swamps. The former is one of great interest, not alone to the ornithologist but to the forester and horticulturist as well. The propagation of many varieties of forest trees was carried on by some local nurserymen on such an extensive scale and in so intelligent a manner that it created a wide interest among nurserymen generally and among those who had the problem to solve of beautifying or reclaiming from practical

worthlessness large areas of barren, sandy, or otherwise sterile regions.

The proprietor of the R. Douglass Son's Nursery, Waukegan, was the one who carried on this praiseworthy work. An added element of interest in the present connection is that the sons of the proprietor, then young men, were all active ornithologists. They furnished many valuable notes to the ornithological writers of that time, and it gives me pleasure to again bring to notice the name of Mr. Thomas H. Douglass, a collecting companion of E. W. Nelson, who has kindly given me the early history of the region herein described. This project of reforestation included the purchase of over 600 acres of sandy barren land in 1873, and the planting thereon during the succeeding 15 years or so, of over 200,000 trees. The following species were represented: balsam fir (*Abies balsamea*), balsam fir (*Abies fraseri*), Norway spruce (*Picea excelsa*), white spruce (*Picea alba*), Norway pine (*Pinus resinosa*), white pine (*Pinus strobus*), Scotch pine (*Pinus sylvestris*), Austrian pine (*Pinus austriaca*), Swiss mountain pine (*Pinus mughus*), table nut pine (*Pinus pingus*), European larch (*Larix europea*), American larch (*Larix americana*), arbor-vitæ (*Thuja occidentalis*), yellow birch (*Betula lutea*), black birch (*Betula lenta*), catalpa (*Catalpa speciosa*), red ash (*Fraxinus pubescens*), white ash (*F. americana*), green ash (*F. viridis*), mountain ash (*Sorbus americana*), European alder (*Alnus glutinosus*), chestnut (*Castanea dentata*), beech-nut (*Fagus americana*), walnut (*Juglans nigra*), hickory (*Hicoria* sp?), and several species of oaks (*Quercus*). The work was done with surprisingly little expense. The surplus of each year's nursery supply was taken to the spot, and the seedlings placed in narrow furrows made with the plow in the damp sand. Here the successful species grew with little further care. The experiment proved an interesting illustration of the survival of the fittest. Most of the species tried died, but, profiting by experience, the experimenters planted during the succeeding years only the hardier varieties. The result to-day, after 30 years have elapsed, are two long tracts of sturdy Scotch pine, with an occasional European larch, or white pine. This artificial forest is one of absorbing interest to the ornithologist. It stands conspicuous in the desolation of marsh and sand dune, and is unique in a region where

native conifers are almost entirely absent. Here migrants and winter visitants find an ideal feeding ground and a haven of rest.

A brief description of the region may be of interest. It extends from the city of Waukegan due north for about six miles. It is a low, sandy waste of dunes and ridges, the latter running northeast parallel to the shore of Lake Michigan, and varies from one half mile in width at its southern end to one and a half to two miles at the northern extremity. Before being partially drained, much of the region was water, occurring in the forms of a wide, shallow pond and two 'dead' rivers. These latter were channels from twenty to thirty rods in width, and without natural outlet. These channels and the pond were continuous and formed a natural waterway extending north and south almost the entire length of the region. Small tributary sloughs entered this larger body. Most of the region is less than ten feet above the lake and only in cases of high water did these confined waters break through a narrow spit and flow into the lake. The dunes and ridges are covered with two species of Juniper (*Juniperus communis* and *J. sabona* var. *procumbens*), sand berries (*Arctostaphylos uva-ursi*), huckle-berries (*Gaylussacia resinosa*), dwarf alder (*Alnus serrulata*), white birch (*Betula populifolia*), and with occasionally white pines and poplars. In its more northern portion are ash, wild raspberries (*Rubus strigosus*), and black oaks (*Quercus velutina*). The western boundary of this region is 'the bluff,' a characteristic feature of the shore of Lake Michigan in this locality. Here it is heavily wooded with a fine hardwood forest of walnut, hickory, various oaks, and the red and sugar maple (*Acer rubrum* and *A. saccharum*).

This region received the writer's close attention during the fall of 1906, weekly visits being made during September, October, and November. This season appeared to be one of remarkable ornithological interest, as the following list of winter visitants will show. Most of the birds were found among the dense pines above described.

The following notes were taken while collecting for the Field Museum of Natural History.

Euphagus carolinus. RUSTY BLACKBIRD.—Specimens were taken at the lake shore on January 22, feeding in a corn field, the first winter record of this species for this region.

Hesperiphona vespertina. EVENING GROSBEEK.—A flock of seven of these interesting and erratic birds was observed on November 10 in Waukegan by Mr. C. W. Douglass. They were feeding on the seeds of a box elder growing along one of the city streets. On November 18 they were observed in practically the same spot, and on this same date Mr. H. K. Coale saw two males and five females feeding on a maple in Highland Park. He also reports that a flock of seven are still (Feb. 7) in Highland Park, feeding on maple seeds, etc., in private grounds. He again saw two birds about December 1 in the same locality. Mr. F. S. Daggett saw two birds at River Forest on Christmas Day, and the writer heard one calling in the same locality on January 13. These birds have been seen in Lake Forest three or more different years, occurring in large flocks. They showed a great fondness for willow buds, and also frequently fed upon the ground, where the entire flock could be seen working industriously among last year's fallen leaves. They would usually remain till late in the spring, when they would depart in a body.

Pinicola enucleator leucura. PINE GROSBEEK.—This species was presumably seen on November 9 and an immature specimen was taken on November 17. It was accompanied by another immature bird at the time. They were found in a thick clump of pines and were moving quietly among the lower branches. They occasionally uttered their low call-note. The following day six birds were seen in Lake Forest, a suburb ten miles to the south. They were feeding on the dried fruit of ash and maple trees. No brilliantly colored males were seen in this flock. They were inclined to be wary when in the flock, but when feeding singly, one could almost stand beneath the tree where the bird was. The birds called to one another frequently, and if really alarmed, the scattered birds would soon gather and the assembled flock would fly off together uttering their clear musical whistle. The birds were next seen on the 25th of November, and a flock of Grosbeaks, presumably of this species, was seen the last of December or the first of January. This flock may follow the habit of previous ones and remain within the park-like city of Lake Forest for the winter.

Carpodacus purpureus. PURPLE FINCH.—The Purple Finches

were first observed on August 27, and were repeatedly observed during September, October and November, at times being quite abundant. They are a regular winter resident in this locality and show a decided fondness for the seeds of the horn beam. Barberry and other fruit-bearing shrubbery is also a favorite resort of this bird.

***Loxia curvirostra minor.* AMERICAN CROSSBILL.**

***Loxia leucoptera.* WHITE-WINGED CROSSBILL.**—The abundance of Crossbills — both species — was perhaps the most interesting feature of this season's bird-study. On October 6 both species were taken, flocks of 10–15 of each kind being observed. They were found in the thick pines, and they made the area grown with these trees resound with their penetrating, metallic notes. These birds must have been continually present from October 6 until December 25 when one bird was seen. They were seen on each of weekly trips made during October and November and at times were extremely abundant, their clear, high-pitched calls being heard almost constantly. The White-winged Crossbills possibly outnumbered the red variety, two to one. Their distribution in the vicinity of Chicago seems to have been very general, as one or both species has been reported from Jackson Park, Chicago, Glen Ellyn, River Forest, and Lake Forest. In the latter place on October 28, several large flocks, one of them numbering about 40 individuals, were seen flying restlessly about private grounds where conifers were abundant. A few detached individuals were frequently observed to suddenly halt their flight overhead and drop into the top of a tall spruce, where they seemed to vanish completely. After a short lapse they would start calling, and then, if they did not suddenly take flight, they would be seen moving like miniature parrots, along the branches in search of cones. The note of the White-winged Crossbill somewhat resembles the call of the Pine Siskin, but it is much magnified in tone and volume. When calling to each other the note has a sharp, strident quality, which the observer can quite easily imitate by giving short, sharp, quick whistles. By this mimicry a flock passing overhead can frequently be lured into the top of the tree beneath which the observer stands. The wariness exhibited by both species varies greatly with circumstances. At times a flock

will alight in the leafless branches of a tree-top, from which they will take flight at the first sign of danger. At other times the observer may approach a low spruce tree in which they are feeding and only with great difficulty can they be dislodged. The white-winged species seems much more disposed to feed upon the ground than its congeners. They are fond of juniper berries and this fall Mr. R. J. Douglass observed them feeding on dried sun-flower seeds, which were still embedded in the withered flower. At the Douglass Nursery a few years ago the White-winged Crossbills appeared in the early spring and descended upon seedling conifers in such numbers that the birds were systematically shot. The Crossbills appear to migrate in large flocks and when a favorable locality is found they scatter in small flocks of a dozen to three or four individuals. When thus scattered it is not uncommon for a lone one to shoot down out of space, and make the place resound with its clear, penetrating calls, which at such times seem to possess an anxious or frightened quality. A friendly call of one of its kind will send the straggler hastily thither. The White-winged Crossbills exhibited an almost endless variety of plumage. The highly colored male birds were comparatively few, being far outnumbered by the females and immature birds in nearly every stage of juvenile plumage. Some young birds resembled the female Red-winged Blackbird (*Agelaius phoeniceus*), and from this degree of plainness a very interesting case of varied coloration was seen. These two species of Crossbill frequently intermingle. All specimens of these species taken this fall were exceedingly fat.

Acanthis linaria. COMMON REDPOLL.—The Redpolls were first observed on November 9, and were abundant at that time. They were first seen in flocks of 25 or more but later divided into smaller companies, some of them joining bands of Goldfinches and Siskins. In closely assembled flocks they alight in a patch of weeds and feed upon the seeds. They work industriously and in perfect silence. Their note, a cheery, plaintive, canary-like call, has a singular sweetness when it is the only bird melody of a bleak winter day.

Spinus pinus. PINE SISKIN.—On September 30, the first Siskins were seen, when a flock of about 15 flew over Lake Forest. Their plaintive, rasping note makes them easily distinguished

while on the wing. Several times a large flock of Siskins were seen to alight on the top branches of a low pine and fairly cover it, like a swarm of bees. Unlike the Crossbills they were observed to feed industriously on coneless branches of pines and spruces. The object sought was probably the dry resinous aments of these conifers. They frequent patches of thistle and seed-bearing weeds and work very actively and in perfect silence. They decoy readily to an imitation of their note, and will alight fearlessly within a few feet of the observer. The specimens secured were in excellent condition, quite fat, and the immature birds formed a large proportion of every flock.

Passerina nivalis. SNOWFLAKE.—A flock of six Snowflakes were seen October 28 on the wide, sandy beach at Lake Forest. From the high bluff overlooking, they could be seen running rapidly from one scanty tuft of grass to another. On November 5, while the writer and a companion were out on Lake Michigan in a row-boat, a small white bird suddenly appeared out of the enveloping haze and passed within three oar-lengths of us. It was clearly identified as a snowflake. These birds were seen again on the 9th of November, and were last seen at Jackson Park on December 15. They are locally a common winter resident here. When alarmed they quickly take flight, and they have an interesting habit of returning to the spot from which they were frightened, after having apparently vanished.

Calcarius lapponicus. LAPLAND LONGSPUR.—Longspurs were very abundant this fall. On November 5, a flock of birds uttering the familiar longspur note passed overhead flying due south. Similar flocks were observed on the 9th and 17th, and on the 18th four or five large flocks flew in a northeasterly direction, over the Government Pier at Waukegan, which extends three or four hundred yards into the lake. It is reasonably certain that a large majority of such flocks were composed of *C. lapponicus*, as *C. pictus* is irregular and not common in this region while *lapponicus* is just the reverse. The latter often occur in vast flocks. The extensive low prairies south and west of Chicago are a favorite resort of this bird.

Calcarius pictus. SMITH'S LONGSPUR.—A flock of forty of this species was observed on November 29 by Gerard A. Abbott on the Golf Links at Jackson Park. He flushed them three times, getting

within a few paces of them. They are not a common bird in this vicinity.

Zonotrichia albicollis. WHITE-THROATED SPARROW.—On January 24, while hunting for winter birds on the beach, I captured four adult specimens of this species. The day was very cold (1° – 10° above zero) with a high northwest wind. This is the first known occurrence of this species here in winter.

Cardinalis cardinalis. CARDINAL.—A pair of these birds were observed on January 13, at River Forest. They are not a common bird here at any season. The spot where they were seen was on the Desplaines River, and they are usually encountered along the heavy timber and underbrush of several rivers in the vicinity which make convenient highways from the center of their abundance in the central and southern portion of the State. Mr. Frank Gates of Chicago reports one seen on the Desplaines River, west of Chicago, on December 24, and one seen in Graceland Cemetery, Chicago, on the 25th and 29th of December and on January 1.

Lanius borealis. NORTHERN SHRIKE.—These birds are of regular occurrence here in the winter. One was seen this year on October 12 at Jackson Park, and specimens were taken on October 25 and November 9. On the latter date a half-eaten White-winged Crossbill, impaled on a dead pine branch, was observed, and the abundance of small birds in the heavy pines, doubtless was a strong attraction to the shrikes.

Ampelis garrulus. BOHEMIAN WAXWING.—The arrival of this irregular winter visitant had been eagerly watched for, when on November 22 Mr. T. H. Douglass saw a flock of ten clustering on his small spruce trees and later feeding on barberry bushes close by. Two were seen by H. S. Swarth about Jackson Park, Chicago, February 2–7, feeding on barberries, and one was taken on the 7th. These birds have often been observed in this locality, they sometimes occurring in immense flocks. Their appearance, however, is very uncertain. They sometimes seek the deep woods for shelter, but they feed more in the open country, where berries and seeds still cling to the shrubbery and trees.

Penthestes hudsonicus. HUDSONIAN CHICKADEE.—This bird was first met on November 5¹ in a heavy clump of pines, where

¹ As mentioned, without definite data, by F. M. Woodruff in 'The Auk' for January, 1907, p. 107.

its little scolding note was several times heard before the bird itself was captured by the writer. On the 8th two more specimens were captured. On November 10 a single bird was observed in Lake Forest, hopping in a lively manner in a small apple tree. It showed no fear and several times could have been touched with a walking stick. These four specimens, occurring in localities ten miles apart, might suggest a rather general occurrence of these rare stragglers from the north. The only other occurrence of this bird in Illinois, was when Dr. Velie observed it at Rock Island subsequent to 1852. Mr. Wells W. Cooke informs the writer that the bird taken on November 5 may safely be considered the second record for the State.

THE PRESENT STATUS OF THE ENGLISH SPARROW PROBLEM IN AMERICA.

BY A. H. ESTABROOK.

THE English Sparrow (*Passer domesticus*), was introduced into the United States in the fall of 1850. The first few pairs were liberated at Brooklyn, N. Y. In the few years then following, many others were liberated at different cities in the United States, so that by 1875, they had spread over practically the whole area east of the Mississippi. From the time of its introduction, there was a storm of protest from the practical naturalists who foresaw the result of its introduction, from its behavior in other countries. They knew its record in countries where it had been a longer resident. The people who introduced the sparrow believed that it would be an insectivorous bird, and would take care of the canker worm which was then troubling the people very much. The canker worm is no longer a pest, but its destruction by the sparrow is not granted by the ornithologists. E. H. Forbush, in his report on the Gypsy moth states that the sparrow has been

seen to eat all forms of the moth, but that the bird itself is more injurious than beneficial inasmuch as the sparrow drives away the native birds which would hold the pest in check. Dr. Elliott Coues made, in 1880, an urgent appeal to the people to exterminate the English Sparrow for the following reasons.

1. They do not perform the work for which they were imported.
2. They attack, harass, fight, drive away, and kill native birds, much more insectivorous than themselves.

In 1889 the United States Department of Agriculture published a 400-page volume on the English Sparrow in America. This work takes up the economic status of the English Sparrow, its food relations, and its behavior with other birds. An amazing amount of evidence against the sparrow is gathered here and the author of the bulletin advises the extermination of the sparrow all over the United States.

In April, 1906, the following questionnaire was printed in these publications; 'The Auk,' 'Bird-Lore,' 'American Bird Magazine,' 'The Oologist,' and 'Maine Sportsman.'

Circular of Inquiry with Reference to the Present Status of the English Sparrow Problem in America.

1. Are you familiar with Bulletin No. 1, The English Sparrow in America, published by the Agricultural Department in 1889; and do you agree with the facts there presented and with its conclusions?
2. Are English Sparrows present in your locality? If so, are they increasing or decreasing in numbers?
3. What is being done with you to exterminate them? Please outline methods which you deem effective.
4. What influence have you observed the English Sparrow to have upon native birds?
5. Would public opinion in your locality favor the adoption of effective measures to exterminate the species?
6. Please state the facts and arguments, pro and con, which decide this problem in your own mind. Please send replies as early as possible — before June 1 — to the undersigned. It is hoped to gather a consensus of opinion from all parts of this Country and Canada. The data will be published as soon as possible.

Signed,

March 5, 1906.

A. H. ESTABROOK,
Clark University, Worcester, Mass.

From this questionnaire and from letters sent out by me personally, I have received about eighty answers. I also wrote to all

the Experiment Stations in the United States, and to prominent ornithologists in Canada. These answers practically all agree that the English Sparrow is an obnoxious bird to have, especially to our native bird population. Several letters state that we have no right morally, to kill the English Sparrow, or any other living creature. But it must be plain to anyone that we have as much right to kill a bird that is generally considered obnoxious, as we have to kill mice, rats, fleas, mosquitoes, bedbugs, and the like. This standpoint of false humanitarianism is derided in most emphatic terms in many of my letters.

I will take up the questions in the order in which they appear in the enquiry, and will endeavor to give the main results secured by the questionnaire.

1. Are you familiar with Bulletin No. 1, etc. This was inserted in the questionnaire to see if the bulletin referred to, had, to any great extent, been circulated through the country, and also to see if it had had any marked effect on the ideas of the people in regard to the sparrow. A good portion had seen the bulletin and most of those agreed with it perfectly.

2. Is the English Sparrow present in your locality? Increasing or decreasing?

The data for the distribution of the sparrow I have secured from the Directors of the different Experiment Stations, and from the prominent ornithologists in Canada. The English Sparrow exists in enormous numbers in the whole region east of the Rocky Mountains; with the exception of Florida, where it is found in a few places, and in Texas, Oklahoma, and the northern part of Montana where it is reported absent. West of the Rockies, he is reported in Utah, Colorado, and in and about San Francisco, and Portland, Oregon. It is found throughout Canada, south of latitude 50°, and as far west as the Rockies. It does not seem to be either increasing or decreasing its numbers to any appreciable extent anywhere in this area.

3. What is being done with you to exterminate them? Outline methods.

In a great many localities, much is being done towards extermination; nearly one half of those answering were doing something to hold them in check, but as these few are scattered throughout

the country, no lasting, permanent effect is secured. The methods used are mostly that of poisoned grain, destroying nests and young, and shooting.

4. What influence have you observed the English Sparrow to have upon native birds?

The influence of the sparrow upon native birds is the crucial point in this discussion. It is not a question of how many insects it eats; it is whether our native birds would be better off without the intruder or not. There were two people, who liked to see the bird about in winter, when the other birds were away. A larger number honestly believed that the bird was doing a good service in the eating of weed seed. These few, however, admitted that the English Sparrow did attack and harass other birds. The rest of the letters were against the sparrow. Many give personal experiences of the sparrow's pugnacity and plead for a sure and certain method to get rid of the species. Others are up and doing and are killing off thousands each year, by poison and the gun. I will quote here three extracts:

"I have frequently observed that the English Sparrow chased the Robins off the State College Campus (Harrisburgh), and last year at my residence on the Penn. State College, I saw a male sparrow kill and drop from the nest four young Pewees, about a week or two old. The parents which are recognized as being among the most insectivorous birds, were entirely helpless in the presence of the intruder and destroyer of their young." — *H. H. Surface*, Pa.

"Have seen them rob Bluebirds' nests, drive away Robins, Wrens, and Crested Flycatchers." — *H. Link*, Indiana.

"The Purple Martins long disputed the possession of their boxes with the sparrows but eventually were compelled to give them at least half the compartments in each box. The Swallows and Bluebirds were driven out nearly altogether for many years, but of recent years have made increased use of the boxes. The Purple Martins are practically gone, and I doubt if the Bluebirds or Swallows would be allowed to nest, if the sparrows occupying the boxes were not turned out and their nests destroyed, as I have been in the habit of doing." — *James H. Fleming*, Toronto, Ontario.

5. Would public opinion in your locality favor the adoption of effective measures to exterminate the species?

Public opinion, in many localities, would favor extermination, but in many places, so-called humanitarians were, and are, still bitterly opposed to sparrow destruction, as in Boston in 1889. But the greater portion of the letters report communities to be entirely indifferent, and difficult to arouse to any definite action. As is always the case, a pest must become overwhelming, before the general public will pay the slightest heed.

6. State facts and arguments, pro and con, which decide this problem in your own mind.

Two letters used the argument that it was cruel to kill any living thing, no matter how good the reason, basing it on the point that the other animals had as much right to live as we had. It was also wrong to teach boys to kill things as it made them cruel. The great majority of writers were thinking of the great danger to our native birds, and this was a sufficient cause to demand extermination.

In Canada the consensus of opinion is the same as in the United States. But there the winters are more severe and so the bird does not attain to so great numbers but shows there, as here, the same fighting qualities that have made him most inimical to our native species.

There are several methods of extermination feasible; destroying nests and young, shooting, and by poisoning. The poisoned grain is prepared by dissolving one grain of strychnine sulphate in one half pint of boiling water. Pour this while hot over two quarts of cracked corn or wheat, stirring well until all the liquid is absorbed. Dry thoroughly, without scorching, and put away labelled. One kernel of this prepared grain will kill a sparrow. Great care must be used with this, and it should be used only when our other granivorous birds are away.

The English Sparrow, or House Sparrow as it is sometimes called, has been a pest in every country in which it has been introduced. At present in New Zealand the people are obliged to take the most drastic measures to exterminate them. They had become so extremely numerous that concerted action became necessary and was demanded by the people, who are now slowly exterminating them. A special officer was appointed in each county, whose sole duty it was to carry on this work. The ex-

pense is borne by a special tax levied on each county. In Australia, the sparrow is increasing to extraordinary numbers and the people are up in arms against it. As the agricultural interests there are involved, the time seems ripe for action. The sparrow is an exotic species to America, and following the law of introduced species, has become a pest and the time is sure to come when the people will demand extermination. When the whole country, or a great section of the country, comes to a definite decision in the matter, then is the time for all to work together and to clean out the species till not one is left. For if any are left, their great ratio of reproduction, four to five broods of five eggs each, each year, would soon render the work useless and leave the people more discouraged than now. The repression of the sparrow cannot be undertaken locally with any lasting or permanent effect, for the killing of a few thousands is as a drop in the bucket, and the small vacuum would soon be filled by others swarming in from neighboring parts.

The letters I have received show that some here, some there, are doing honest work toward sparrow extermination, and while I do not want in the least to discourage them in their efforts, the results are only temporary and the work must be kept up continually. If one State or group of States set to work carefully within their borders, some lasting results will be obtained and the continuous work need only be kept up on the borders of the territory where the sparrow has been exterminated. But a far better way is to have the whole country do this extermination, now, at once, and all over the United States.

RECENT ORNITHOLOGICAL DEVELOPMENTS IN SOUTHEASTERN MICHIGAN.

BY B. H. SWALES AND P. A. TAVERNER.

NATURE means change. Nature plus man means transformation. The time is passing, and with it many of our once common species are traveling to extinction. The records of the past are fragmentary and misty and, in the light of present day conditions, the accounts of old authors are often almost past belief. Of the great flocks of water birds that once visited our waters, but an infinitesimal fraction remain and, in many specific cases, none at all. Just what the conditions were, in the old days, it is hard to tell. Game was too common, then, to be mentioned specifically; and now we can but surmise at what the great migrant hordes were composed of. Even at a later date ornithological knowledge of the rarer forms was too rare and incomplete to form the basis of modern scientific conclusion. What has been change and what misreport is but too often the problem of our list makers. The changes have been gradual and are still going on, but too often we have only awakened to the fact of the growing rarity of a species when it has utterly vanished from our horizon. Through it all, various observers have come, noted and gone; and their records have been copied and recopied and present conceptions of avifaunal conditions, in many cases, are but composite pictures of various past stages and the present. The limited opportunities most of the older observers enjoyed for the definitions of the obscurer forms, their more or less indefinite data and the loss of their specimens, also throws a veil of doubt over their records that there is now no way of piercing.

The past has gone and left but scanty record behind. Whether the present does likewise, rests with us of the present. That the next generation may not say of this as we say of the past, it seems most necessary, as various points turn up, that they should be put in an enduring form, as well for the correction of current misconception, as for a legacy to the future. To this end, the following notes have been sifted from our note books, as showing the salient

features of the past few years' work in this vicinity. Some are but formal records of occurrences, others scraps of life history or other bits that seem of more or less interest. In all cases we have given the local conditions as we have found them, taking nothing for granted that could be verified, and locating, definitely, the specimens in as many cases as possible. Eyesight records have been used but sparingly, but wherever no other are available we have attempted to give the conditions under which the identifications were made that the reader may use his own judgment as to the conclusions. It may be observed that in some cases we are at variance with lists of adjoining localities, and the reports of other observers. This cannot be helped. Our experience has been as follows and, as we have taken the utmost care in identifications, variation must be attributed to differences of locality or other reasons that suggest themselves.

The delta of the St. Clair River, known as the St. Clair Flats, has long been looked upon as that paradise of water birds where all species breed and some birds have been reported from there apparently on the principle that if not there they should be. Some of these records have been copied extensively and we have taken this opportunity to correct some of the most flagrant of them.

Larus delawarensis. RING-BILLED GULL.—There has been some doubt expressed as to the occurrence of this bird at the western end of Lake Erie (see Jones's 'Birds of Ohio,' p. 29). We have always been confident of its occurrence here and have recorded it many times in our notes. On coming to look it up, however, we were surprised to find an entire lack of actual specimens and that all our identifications had been eyesight ones. We have therefore, this fall, paid special attention to this species, with the following results: About October 15 Mr. Campion had a pair of wings that we identified as from a bird of this species taken on the river. November 1, while crossing the river, Mr. Taverner watched a small gull sailing in circles with a Herring Gull. Though it was never close enough for the characteristic ring on the bill to be distinguished, every chance was given to compare the two birds in point of size, as they crossed and recrossed each other's courses many times and often in close proximity to each other. November 12, Mr. Campion received a juvenile bird from Pine Lake, Oak-

land Co., the second county back from the river, and we examined it in his shop. On the 15th, Mr. Swales observed another on the river under similar circumstances to those above described, and about the same time Mr. Eppinger mounted another local specimen. Mr. Campion has an adult mounted bird in his window, taken several years ago, and informs us that he receives several every year from the local shooters. We regard these records as amply substantiating our claim that this species is a regular migrant on the Detroit River. It occasionally remains during mild winters.

Gelochelidon nilotica. GULL-BILLED TERN.—Reported from the Flats, but the observer now repudiates the record, and as there is no other substantiating data, it will have to be thrown out.

Sterna caspia. CASPIAN TERN.—We have no absolute data for this bird on the Detroit River, though Mr. Campion states that about October, 1901, he saw two flying up the river just out of gun range, and Mr. Fleming informs us that Mr. Maughn of Toronto has had three from the Ste. Anne's Gun Club, on the Canadian side of the Flats. At Point Pelee, at the west end of Lake Erie, in company with Mr. W. E. Saunders, May 13, 1905, we saw several beating up and down the shores with Common Terns under much the same circumstances as described under the head of Ring-billed Gull; their superior size but like coloration to their companions, made identification practically certain. On September 8, of the same year Mr. Swales observed two, in nearly the same locality, as they flew by just out of gun range.

Sterna forsteri. FORSTER'S TERN.—We have but one record of this species, a juvenile taken on the lower Detroit River Sept. 10, 1890, by J. C. Wood. This bird was identified by Mr. Robt. Ridgway and is in Mr. Swales's collection.

Sterna antillarum. LEAST TERN.—We have no evidence whatever of the occurrence of this bird in the vicinity. It is interesting to note (Auk, XXIII, pp. 452-453) that all the so-called specimens of this species that Mr. Fleming has examined from the adjoining Province have proved to be immature Black Terns. This confusion may well be the basis of our local records.

Phalacrocorax dilophus. DOUBLE-CRESTED CORMORANT.—During 1906 we have examined three specimens in the local taxidermist's shops. One, taken in April, has the breast nearly white

flecked with black, and is the second local spring record for the species. The two others were sent in from the St. Clair Flats October 1 and November 25. This seems to be about the usual number taken each year on the river and the vicinity.

Anas obscura rubripes. RED-LEGGED BLACK DUCK.—The search for this subspecies, this fall, has brought to light several that we are confident belong to the variety. The Black Duck nests regularly at the Flats and all the early fall birds belong to this breeding form. The variants do not come until November. We have unfortunately so far been unable to secure specimens for expert advice. We examined one in Campion's shop, taken December 11, that is undoubtedly a hybrid (*A. boschas* + *obscura*). This has a few slight tendencies towards the Mallard in general shape, and the coloration of the tertials. Over the eye there is a perceptible shade of green, otherwise we should call it a well marked Red-leg. It was taken in company with a typical Mallard-Black hybrid, showing about equal traces of both parents. We should judge that the before mentioned bird has about the appearance that would be exhibited by a cross between an ordinary hybrid and a Black Duck and would be well represented by the formula (*obscura* + *boscha*) + *obscura*. Both these were taken on the lower Detroit River.

Chaulelasmus streperus. GADWALL.—The Gadwall is a decidedly rare duck in this vicinity. Todd, in his 'Birds of Erie and Presque Isle,' lists it as the "rarest duck on Lake Erie." In a MS. list of birds in the Museum of the University of Michigan, date unknown, a specimen is listed with the following data: "State Survey, Southeastern Mich.—Dr. A. Sager." The bird itself has been lost and further information on it is unobtainable. Mr. Fleming informs us that Mr. John Maughn, of Toronto, has had several pass through his hands from the Ste. Anne's Gun Club, St. Clair Flats, Ont. During the past fall of 1906 we have examined three females in Campion's shop; one was taken October 26, Lower Detroit River, and the other two, November 15, Monroe Marshes, Monroe Co. One of the latter is in Taverner's collection, No. 777.

Spatula clypeata. SHOVELLER.—We have been able to find but one specimen of this species in a number of years. On October

26, 1906, a female was taken on the lower part of the river and sent to Mr. Campion to mount, in whose shop we examined it. Even twenty years ago this was considered a rare bird on the St. Clair Flats, one of the most famous ducking grounds in the country.

Aythya vallisneria. CANVAS-BACK.—We are informed by an inhabitant of Hickory Island that a small flock of Canvas-backs remained all last winter (1905-06) on the open waters of Lake Erie just off the mouth of the Detroit River.

Aythya collaris. RING-NECKED DUCK.—Though once regarded as a common duck, the Ring-neck is far from being such at present writing. Despite of keeping a close eye upon the contents of the taxidermy establishments of the city, questioning the shooters and examining their game bags at every opportunity, we have found but one local specimen, April 10, 1905, from the Flats. On November 15, 1906, we received a male from Point Pelee, Ont., which is in Mr. Taverner's collection.

Oidemia deglandi. WHITE-WINGED SCOTER.—Records of this scoter are rare enough to make it desirable to mention a male taken at Fox Island, Lower Detroit River, Nov. 22, 1906, by Mr. Atkinson. This is in Mr. Taverner's collection. This species is known among the shooters by the name of "Squaw Duck."

Chen hyperborea. LESSER SNOW GOOSE.—Since recording our opinion of this species in southeastern Michigan (Auk, XXII, pp. 219, 220), Mr. Taverner has examined several old specimens in the University of Michigan Museum that are ascribed to this section and has found that they all belong to this form. We can get no evidence that any other form has ever been taken.

Olor columbianus. WHISTLING SWAN.—It is interesting to note that, during the winter of 1905-06, a small flock of swans wintered near the western end of Lake Erie. We were so informed by a resident of Hickory Island who stated that they were very wary and noisy and kept well out in the middle of the lake. As will be remembered, the winter was very open and mild, and there was little or no ice until February. It is much to be desired that all local swans be critically examined, as there still seems to be some hope that the Trumpeter yet occurs rarely on our waters.

Ardea cærulea. LITTLE BLUE HERON.—September 22, 1906, in Leamington, Ont., we examined a mounted bird in the collection

of Mr. John Conover of that city. It was taken in September, 1904, near the base of Point Pelee by Mr. Dan Goyeau. Mr. Conover had all his things packed ready for moving to another city and the specimen was not situated so that a critical examination could be made. It was, as far as we could see, pure white, without plumes or markings of any kind. We based our identification on the color of the legs which were painted yellow. Whether this was their original color, or the taxidermist's idea of the "eternal fitness of things" there is no means of knowing. We, however, assume the former, and in that belief, place the specimen under this heading with a question mark.

Nycticorax nycticorax naevius. BLACK-CROWNED NIGHT HERON. — Though said to be a common bird on the St. Clair Flats by Langille (1883), it is now but rarely seen in this section. We have a few straggling records for the species at various points from the Flats to the Lower Detroit River, so it evidently occurs as a straggling wanderer once in a while.

Steganopus tricolor. WILSON'S PHALAROPE. — Records of this species are very rare. In addition to Taverner's record (Auk, XXIII, p. 335) and that of J. C. Wood (*ibid.*, p. 334) referring to the same place, and likely to the same individual, Mr. Campion informs us that he mounted a high-plumaged female, taken on the Flats in May, 1906, by Mr. Clarence Conely of Detroit, in whose possession it now is. It is interesting to observe that after all these years of non-observation of this species, two should have been taken at nearly the same time and within twenty miles of each other. There is a possibility, of course, that this last one is one of the same individuals recorded by Mr. Wood, as the locality where it was taken is directly on what would appear to be the natural channel of its migration route to the north.

Actodromas fuscicollis. WHITE-RUMPED SANDPIPER. — Mr. Wood's statement in 'The Auk' (XXIII, pp. 458, 459) that this species is common in eastern Michigan we received with a good deal of surprise. The above record and that of Mr. Taverner's (*ibid.*, p. 335) are the first that we have been able to find for this section. Mr. Swales has known Mr. Wood for a great many years intimately — in fact up to the spring of 1904 they were constant field companions, but in none of their ornithological talks

did Mr. Wood ever mention having seen this species even when the subject of conversation turned on the results of these same Port Austin trips. It is certain that none of these birds were taken, or if taken they were not preserved. We believe that Mr. Wood's identifications of the White-rumped Sandpiper on the Lake Huron shore are purely retrospective and that an entirely misleading conception has been given of the status of this species in the State.

Charadrius dominicus. GOLDEN PLOVER.—The standing of this species in our local list is far from satisfactory. It seems to be generally regarded as a more or less common migrant, but specimens to support the claim are not forthcoming. We have found but one bona fide specimen for the Detroit River,—N. A. Wood, Oct. 12, 1895, Gibraltar, Mich. Others have upon examination proved to be Black-bellied Plovers (*Squatarola squatarola*). We have found the latter common during the falls of 1905 and 1906 at Point Pelee and have met with but one each year of the Golden. The experience of W. E. Saunders in southern Ontario has been about parallel with ours in regard to the relative abundance of the two species, and Mr. Fleming (*Auk*, XXIII, p. 451) gives information pointing to the conclusion that the Golden Plover is an erratic visitor to our shores, while the Black-belly is a regular and common local migrant. It seems that most, if not all, the Lake Erie and Ontario records of the Golden Plover are fall ones, yet this is just the season that they should not be found here, according to W. W. Cooke in his 'New Facts About the Migration of Birds,' 1903. The mention of *S. squatarola* in most of our local lists is suspicious in the light of the above. The well known sportsman writer, Ed. Sandys, has an entertaining account (*Outing*, 1899, p. 183) of the unusual abundance of Golden Plover in the region of the Thames River, on the Canadian side of the Lake St. Clair, during September and October; and again (*ibid.*, 1897, p. 305), he states that on the shores of Lake St. Clair he found them very common October 15, 1896. Immediately on the other side of the lake, we have never been able to get track of the species, either by personal observation or by talks with the shooters.

Arenaria morinella. RUDDY TURNSTONE.—We have seen a case containing two high-plumaged Turnstones that Mr. Campion

tells us he took near the River Rouge. He says there were five in the flock and he got them all. It was in the spring, about 1898. He also reports mounting a Turnstone for the Mr. Conely before mentioned under the head of Phalarope. Mr. Taverner took one at Point Pelee September 15, 1905. This appears to exhaust the records for this section.

Accipiter atricapillus. AMERICAN GOSHAWK.—Prior to 1906 we have but two records for the Goshawk in the neighborhood of Detroit, namely, Wayne Co., Dec. 24, 1898, and Oakland Co., Oct. 30, 1905. This fall, however, we have had a flight worthy of more than passing notice. October 15 we flushed a large *Accipiter* that we were confident was of this species at Point Pelee, Ont., but did not receive confirmatory evidence of the correctness of our identification until October 21, when we received an adult male from the same locality, followed by an adult and a juvenile October 23. On November 8 we received four birds, and November 14 three, all from the Point. The first local specimen was in the taxidermist's hands about October 29, and single birds were received November 10, December 11, 24, 30, and January 18. Several were reported from Pelee December 1 and January 18. Of all these but two were juveniles, one as above mentioned and the first of the local birds. Of the remainder, two of the Pelee and one of the others had a trace of the dark stripings of the immature plumage, and were, we should judge, birds of the second year. From these specimens it was easy to pick out four distinct plumages, which seems to indicate that the species does not attain its full plumage until the third year. The winter of 1896, saw a flight of Goshawks at Toronto when the same conditions as to the scarcity of young birds prevailed (see Auk, XXIV, p. 72), and again this year Mr. Fleming reports another one like it. Strange to relate, however, in the intermediate territory at London, Mr. Saunders has seen no Goshawks at all this fall. Correspondence has shown that the flight has not penetrated into the interior of the State, where the only records that we hear of have been from Midland and Clare Counties, where, however, the species seems to be a more or less common visitor. The flight also seems not to have crossed Lake Erie, as Dr. Lynds Jones spent some time at Cedar Point, directly opposite Point Pelee, on

the Ohio shore during the height of the flight and does not mention them in his report of his trip (Wils. Bull., Dec., 1906).

Nyctea nyctea. SNOWY OWL.—We have also had a flight of Snowy Owls this fall and early winter, that has not been so remarkable for the number of individuals as for the peculiarities of the individuals composing it. Hitherto the general run of Snowy Owls taken here have been of the usual heavily marked form. This fall, however, the males have all been of a remarkable whiteness. The first one of the season was received from Point Pelee, November 1, and must have been taken a few days previous. This is a male and nearly white. What darker markings there are, are very light in color and are sparsely sprinkled over the wings and lower breast. We received another, a female of the usual dark coloration, from the Point November 7. Since then five have been examined in the shops, two coming from Port Huron, both white, and one from Grosse Isle in the lower Detroit River, which is almost immaculate. The other two were females and were dark. All males have been light and all females dark. It seems that this flight must have originated in a different geographical quarter than previous ones. It is known that in the northwestern Provinces of Canada this light bird is the usual form, and it is most likely that these birds came from somewhere in that direction, while our usual visitors originate some distance further east. The occurrence of the dark females indicates nothing to the contrary, as the female of the white male is invariably of the dark type. From what data we can gather it does not seem that this whiteness is the result of full maturity, otherwise it might be inferred that this is an irruption of adults somewhat resembling the flight of Goshawks described above. That there is something more than ordinary in the occurrence of these birds this fall is evident on studying their peculiar distribution over Michigan and Ontario. A map showing the occurrence of the Goshawk this fall would do equally well for the Snowy Owl. White birds have been common at Toronto, as we are informed by Mr. Fleming; none of any kind have been noted at London by Mr. Saunders, and there are no reports from the interior of the State. The only way we can account for this strange state of affairs is that these two species have followed some such route as Taverner mapped out (Bull. Mich.

Ornith. Club, 1905, pp. 3-7). We surmise that they came down from some point to the northwest of us, and at the head of Lake Huron divided into streams, one following the main land around the indentation of Georgian Bay and then overland to Toronto; and the other cutting across the mouth of the bay via the Manitoulin Islands to the Bruce Peninsula, and thence down the shores of Lake Huron to their present recorded distribution.

Empidonax flaviventris. YELLOW-BELLIED FLYCATCHER.—Up to the summer of 1906 we regarded this species as a rare migrant, but August 12, 1906, we secured one and observed several more, and from then on found it one of the commonest of the *Empidonaces*. At Point Pelee we have found it abundant all through September in both 1905 and 1906. It is probable that hitherto it has been overlooked here owing to the notorious difficulty of separating the small flycatchers in the field, and the lack of attention that is generally given them. The seeming absence of this flycatcher along the Ohio lake shore is probably due to the same cause, as it is most improbable that it should be so abundant at Pelee and as rare on the Ohio shore as the published records would lead one to suppose. From our experience with the Yellow-bellied Flycatcher, we regard it as a more or less common and likely regular migrant in southeastern Michigan.

Hesperiphona vespertina. EVENING GROSBEEK.—This winter (1906-07), this rare straggler has again been with us for the first time since the general flight of 1889-90. We had received reports of its occurrence a few miles inland but it was not until December 30 that its appearance here was announced by a male being brought in to one of the taxidermist shops of the city. So far, January 28, this is all we have heard of in the immediate vicinity.

Carpodacus purpureus. PURPLE FINCH.—Although this bird is reported as a not uncommon winter resident inland (Ann Arbor and Plymouth), we have no winter dates for its occurrence here. During the past fall we met with a great number of Purple Finches both here and at Point Pelee. The interesting feature observed was the silence of the adult red birds. The olive juveniles sang freely, but the bright ones uttered but monosyllabic call notes, and in no case made any attempt to sing. Also there were but two types of plumage observed, good bright red adults and plain olive juveniles; there were no intermediates.

Loxia leucoptera. WHITE-WINGED CROSSBILL.—Records of the White-winged Crossbill in southeastern Michigan are few and far between. Jas. B. Purdy records (Cook, Bds. of Mich., 1893, p. 108) that he secured a pair at Plymouth but gives no further data. During the past fall the species seems to have been generally distributed over southern Ontario, and on November 8 Mr. Swales found a small flock on Belle Isle, in the Detroit River opposite the city. These birds, two of which were males, were feeding on the ground on the edge of the woods and were very tame. November 13, we received a male from Point Pelee. The species seems to have been common at London since early November but we can get no satisfactory evidence of its appearance in the State west of us.

Coturniculus savannarum passerinus. SAVANNA SPARROW.—In 'The Auk,' XXII, p. 89, Mr. Taverner recorded the breeding of the Savanna Sparrow in the meadows of St. Clair Co., on the edge of the Flats. In 'The Auk,' XXIV, p. 97, appears what is evidently an oblique criticism of the same. It may be well, under these circumstances, to enlarge upon the previous record and give the facts of the case as they occurred. We do not for a minute admit that the occurrence of an individual or a pair in the breeding season warrants the conclusion that they are breeding, when found outside their known range, but the reader can judge of the following facts. In these rather damp meadows we found the Savanna Sparrows in considerable numbers throughout the spring and summer. Those taken had the skin of the abdomen thickened and all other indications of being breeders. The nests were not looked for, as we deemed their occurrence in numbers throughout the breeding season was evidence enough, especially as Taverner had already found them regular breeders at Port Huron, a few miles north, and W. E. Saunders had reported them as common on the opposite side of the Flats. We thought it nothing strange that they should breed here, and published the fact merely as a matter of record. Since then we have invariably found them in the same numbers in the same place during the full spring and summer months. We think the evidence is perfectly satisfactory, far more so, in fact, than that of the breeding of the Black-throated Blue Warbler (Auk, XVII, p. 390).

Melospiza cinerea melodia. SONG SPARROW.—The Song Sparrow occasionally winters with us in limited numbers and in certain favored places. We have three January specimens taken in 1906 and 1907, and though mid-winter birds, each was very fat indeed when killed. Whether it is only those in exceptionally good condition that can remain in winter or that those that stay with us find food abundant it is hard to say.

Cardinalis cardinalis. CARDINAL.—There is no doubt but that the Cardinal is on the increase with us in southeastern Michigan. In the immediate past it has always been observed in singles, and then generally in the winter. In the fall of 1904 we found a brood of young birds, accompanied by both parents, and with the neosoptile still attached to the feathers, on the main land near the St. Clair Flats. In May, 1905, two were observed at Flat Rock, on the Huron River, and again January 6, 1907, we met six scattered along the river between Flat Rock and Rockwood. Besides these we have met single individuals in most of the spring, fall, and winter months between Detroit and the mouth of the Huron River. The valley of this stream seems to be the main artery of their distribution in this section, and they are now reported as rather common as far up it as Ann Arbor. Mr. Taverner was well acquainted with this region and its birds from 1892-94, and at that time the Cardinal held its position in the Washtenaw Co. list solely on the ground of a single old record. The same seems to have been true of Wayne Co., though there seems to be good evidence that some half a century ago it was a still more common feature of our landscape than it is even now. Many old residents speak of the "red birds" that they used to see. We do not think that they have confused the Tanager with this species, as they mention its whistling powers, and, besides, the Cardinal has always been a common cage bird here and was well known. If this is so it seems to indicate that some large cycle is completed and the Cardinal is but regaining a lost habitat.

Dendroica striata. BLACK-POLL WARBLER.—Though one of our most abundant fall migrants, this warbler has yet to be detected in the spring in Wayne Co. To the west, north and east of us, however, it appears to be a rather irregular but not uncommon spring migrant. It is often observed at Ann Arbor, Mr. Taverner

met it during the springs of 1901 and 1902 at Port Huron, and Mr. Saunders regards it as not uncommon at London. We met the species in limited numbers in May, 1905 and 1906, at Point Pelee. It seems then that Detroit is carefully avoided by this bird in the spring and is an indication of the peculiar situation this section occupies migrationally.

Thryothorus ludovicianus. CAROLINA WREN.—August 11, 1906, we added this species to the Wayne Co. list when Mr. Taverner took a juvenile male near Palmer Park, on the outskirts of Detroit. We were first attracted by its clear, bubbling, liquid notes proceeding from a tangle of blackberry canes. Though a young bird it is not sufficient to found even a hypothetical breeding record, as it could fly perfectly and might have come from almost any distance. It is rather interesting to note that most of the extralimital cases of this bird's occurrence in the adjoining sections have been in the fall, and seem to indicate that this species has a tendency to wander north after the breeding season, as do the herons and some other birds. It may be explained by the fact that all birds are more numerous in the postnuptial than in the prenuptial season, due to the great numbers of newly raised young. There may therefore be greater chances of rare birds being seen then. For various reasons, however, we incline to the former than to the latter explanation. For one thing, the same movement seems to occur in the Cardinals and hitherto more adults have been observed here in the fall than immatures.

Sitta canadensis. RED-BREASTED NUTHATCH. — This little nuthatch is something of a puzzler. It is a migrant here, yet we understand that it winters in the Upper Peninsula. With us it is extremely erratic in its appearance, being common some years and then absent for several years in succession. This fall (1906), for the first time in some years, it was common. The first specimen was seen in the city August 30. September 1 to 3 they were common at Point Pelee, and still more so from the 15th to the 22d, and October 15 vast numbers were seen there. They were everywhere, in the hard woods, hanging head downwards from the tips of the long branches, in the orchards, creeping over the trunks, and in the red cedar thickets; but by far the largest numbers were towards the end of the Point on the edge of a waste clearing where

every dead and dry mullen stalk had several of their little blue forms upon it. There seemed to be hundreds in sight at one time. They did not appear in anything like such numbers about Detroit, and we did not see more than a couple or so at a time and generally three or four made a day's record. The last one was seen October 21 at Rockwood, though Mr. Taverner saw a pair taken at Ypsilanti Jan. 11, 1907. The occurrence of these birds seems to have been pretty general this fall and we have reports of them through lower Ontario and adjacent portions of this State. A comparison of the old records of Mr. Swales with those of Mr. Saunders of London shows a strong similarity of abundance that no other species that we have compared in this way has revealed. It indicates that the movements of this species are not so eccentrically erratic as some others, or, rather, the same causes that move the winter visitors of southern Ontario also brings ours down. There is, then, a connection between the Red-breasted Nuthatches of Ontario and Michigan that is not evident in other species. Indeed, from the study of the winter migrants of the two sections, as a whole, we are confident that their winter migrations are entirely independent of each other. There is a strong similarity just along the boundary between the two countries but it does not extend to any distance inland.

THE BEWICK WREN IN THE DISTRICT OF COLUMBIA, WITH A DESCRIPTION OF ITS SONG.

BY ARTHUR H. HOWELL AND HENRY OLDYS.

THE Bewick Wren (*Thryomanes bewicki*) has for some years been known as a rare visitant in the District of Columbia, occurring mainly during the spring migration (April). Since Mr. Ridgway's published records of its occurrence here¹ it has been noted a number of times by various observers, and during the seasons of 1905 and 1906 we secured evidence of its probable breeding within our limits.

A single bird was observed at Petworth (a suburb of Washington) on April 29, 1905, our attention having been called to its song by Mrs. Arthur Brown, who said the bird had been living in the near vicinity of her house for several weeks. It was noted by her many times during the spring of 1905, but disappeared in July to reappear, however, in April of the following year. On June 2, 1906, we visited the locality and spent several hours watching the wren and listening to its varied and attractive song. The bird was restless and very active, choosing usually for its perches some high and exposed situation, such as the pinnacle of a roof or cupola, or a dead branch on some large tree. After singing for a short time from one of its perches it would fly to another some distance away, and at once sing again, but it remained constantly within an area of not more than four or five acres. Its beat included several suburban streets and a number of houses, but was surrounded on three sides by open fields and woodland.

We heard the bird again later in the month (June) but at no time did we find a nest or even a mate — if it had one. Following is a list of all the records of this species in the vicinity of Washington that we have been able to secure, most of them kindly furnished by Dr. Charles W. Richmond:—

April 10, 1882.	Arlington, Virginia.	Specimen taken by Wm. Palmer.
April 6, 1883	" "	" " " " "
April 8, 1888.	Washington, D. C.	" " " M. M. Green.
April 22, 1888.	" "	One seen by " "

¹ Auk, IX, 1902, p. 307.

Nov. 24, 1889.	Four Mile Run, Virginia.	Specimen (♀ ad.) taken by J. D. Figgins.
Dec. 22, 1890.	Washington, D. C.	One seen by Chas. W. Richmond.
March 26, 1897.	" "	Specimen taken by Jas. H. Gaut.
April 5, 1892.	Brookland, D. C.	One seen by Robt. Ridgway.
April 4, 1894.	" "	" " " " " "
April 5, 1906.	" "	" " " " " "
April 29, 1905.	Petworth,	" " " " A. H. Howell.
June 2, 1906.	" "	" " " " Howell & Oldys.

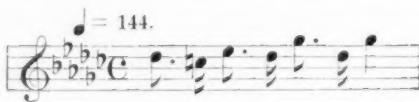
The following account of the singing of the wren is based on material secured on the occasion of our joint visit to the locality on June 2. The notations were made from the songs as they were delivered and were verified from subsequent repetitions of the phrases uttered.

The first song heard was made up of equal parts of the Grasshopper Sparrow's buzz and the Chipping Sparrow's rapid repetition of one note. Taken as a whole the song was somewhat suggestive of that of a Chewink. After repeating⁴ this strain for a while, the bird changed to the following song, delivered in the voice of a Field Sparrow:



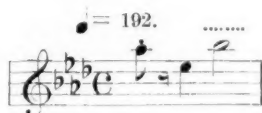
The opening notes were two (sometimes one) introductory squeaks, that suggested the idea of sounds made by the vocal machinery in starting. The next three were clear and resembled the beginning of the song of a Song Sparrow, though clearer than is usual with the Song Sparrow. The closing note was a rapid repetition of a single tone (indicated by the dotted line above), in quality and character hardly distinguishable from the usual closing note of a Chewink.

After one or two other changes of theme the wren, with delightful versatility, swung into a charming little song, which began with a melodious arrangement of clear notes marked by an attractive rhythm, very unusual, if not unique, among birds:

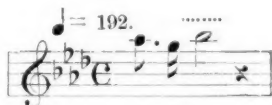


No sufficient opportunity offered to write the rest of the song on the staff, but the three notes with which it closed may be indicated by the syllables '*sweet, sweet, sweet,*' uttered rather rapidly.

This song bore no resemblance to that of any other bird in this region, and was probably the wren's own. But that the Bewick Wren is an excellent mimic, was very palpably shown by the individual bird under consideration. The possession of an imitative faculty was indicated by the first songs noted; but before the interview was over the bird gave unquestionable proof of its powers by directly imitating the songs of a Chewink and a Field Sparrow that were singing near by, following each song by those birds with an imitation of it. The mimicry was mainly in quality of voice and style of theme, though the intervals used by the chewink and the sparrow were fairly closely followed by the wren. Thus when the chewink sang —



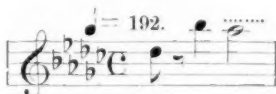
the wren responded with —



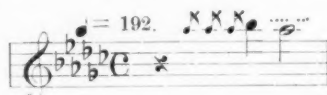
or sometimes $\frac{1}{m}$



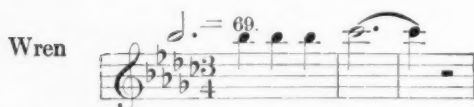
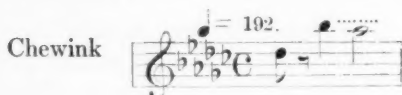
And when the Chewink changed to —



the wren altered its theme to correspond, thus:



Sometimes, however, the answering was supplemental, instead of imitative, thus —



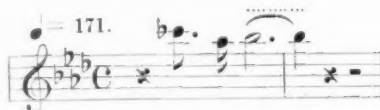
The Field Sparrow song, which occurred later, consisted of the following, with a few added, less important, notes —



As in the case of the chewink song the wren had two replies to this. The first was a nearly exact reproduction of the Field Sparrow's notes, though with a different tempo —



The second was, as in the second rejoinder to the chewink, rather more supplemental in character —



As far as may be safely permitted by this limited, but satisfactory, observation, the Bewick Wren must be accorded high rank as a singer.¹ Its voice has not the ringing quality of that of the Carolina Wren, nor are its notes always as pure. But though less brilliant in tone than the Carolina Wren and less energetic in style than either that singer or the non-musical House Wren, the Bewick Wren has a sweetness of voice and an ease of delivery that are very attractive, while in versatility it far excels either of the others. And the single song heard that appeared to be its own, uninfluenced by those of other birds, is of a higher order in its musical construction than the simple themes of the Carolina Wren (the House Wren's voluble utterance, though pleasant to hear, bears no resemblance to human music).

In imitative ability the Bewick Wren has, apparently, no rival among our eastern birds other than the Mockingbird, by which, however, it is greatly excelled. The Carolina Wren and Brown Thrasher seldom imitate other birds, despite a popular belief to the contrary, and the few imitations they give are delivered in their own quality of voice — translations into their own tongue, so to speak. The Catbird attempts imitation more frequently than Thrasher or Carolina Wren, but also renders imitated songs in its own tongue and often merely mingles bits of mimicry with its own disconnected, ejaculatory phrases. The Chat sometimes, though rarely, reproduces other birds' songs fairly well, and a few more birds show traces of the faculty;² but none of these is to be compared with the Bewick Wren. The latter, during the short period of observation under consideration gave a number of imitations and not only reproduced notes uttered by other birds in the vicinity but performed the more difficult feat of reproducing with a considerable degree of exactness the quality of tone in which they were uttered. It seems to be better entitled to the sobriquet of 'Mocking Wren,' than the Carolina Wren, on which the name is sometimes inappropriately bestowed.

¹ I have listened many times to the songs of the Texan Bewick Wren, whose musical talents apparently are fully equal to those of the eastern subspecies. The songs given by the Texas birds resembled in form and tone quality the finest song heard from the Petworth Wren, and there was an almost endless variety in the construction of the songs.—A. H. H.

² I have even heard the English Sparrow give an excellent reproduction of the Carolina Wren's musical alarm note.—H. O.

CONCERNING CERTAIN SUPPOSED INSTANCES OF
THE OCCURRENCE OF THE CINNAMON TEAL
IN FLORIDA AND SOUTH CAROLINA.

BY WILLIAM BREWSTER.

It is by no means easy to distinguish females and young males of the Red-breasted or Cinnamon Teal (*Querquedula cyanoptera*) from those of the Blue-winged Teal (*Querquedula discors*), even when accurately named skins of both species are available for comparison. Without the aid of such material no ornithologist, however experienced, should attempt to positively determine any but fully adult male birds unless his specimens were obtained in regions where the species to which he is inclined to refer them is known or likely to occur and the other bird is almost certainly not to be found. The impression — rather generally entertained it would seem — that the Cinnamon Teal is always red-breasted is wholly without foundation, for as a rule — if not invariably — only males in full nuptial plumage are thus characterized. On the other hand Blue-winged Teal of both sexes and of various ages are often conspicuously tinged on the breast, belly and flanks, with reddish brown or rusty. This appears to be merely a superficial stain — perhaps derived from contact with mineral matter held in solution in water or in semi-liquid mud. It is too nearly indelible, however, to be removed by vigorous and repeated washing, and it probably persists until the plumage is changed at the next regular moult. It is by no means peculiar to Blue-winged Teal, for it may be noted in occasional specimens of most of the ducks which, in autumn and winter, frequent the fresh and brackish waters of our South Atlantic States. I am not aware that it ever occurs in the Red-breasted Teal, but that it may do so occasionally is not improbable. Females and males of the species last named are said to differ from those of the Blue-winged Teal in having coarser and more pronounced dark markings on the under parts. There may be a tendency to dissimilarity of this kind, but I have not found that it is either pronounced or constant. A better character in my opinion is that afforded by the bill, which is almost invariably

longer and narrower in *cyanoptera* than in *discors*. I have seen one or two birds, however, which, after the most careful study, I have been unable to satisfactorily determine by the tests just mentioned or by any others known to me.

In view of these inherent difficulties and popular misconceptions it is perhaps not to be wondered at that reddish-stained specimens of the Blue-winged Teal, such as I have just described, should be sometimes mistaken for Cinnamon Teal, even by ornithologists of good standing and large field experience. That several important published records of the supposed occurrence of *Q. cyanoptera* in our South Atlantic States were either certainly or probably based on erroneous identifications of this kind I shall now proceed to show.

The earliest of these records is by Dr. J. A. Allen who, writing in 1869,¹ says: "This species [*Q. cyanoptera*] was found by Mr. Maynard in great numbers in the savannas of the upper part of Indian River, but unfortunately the specimens he obtained were lost."

Mr. Maynard told me, not long after this experience happened, that his birds were identified in the field and that he referred them to *cyanoptera* merely because of the fact (which he supposed at the time to be conclusive) that their under parts were tinged with reddish. When Mr. Cory and I were shooting in these same 'savannas' in February, 1889, we found no Red-breasted Teal, but wintering Blue-wings were met with in numbers and several of the specimens we killed had rusty-red bellies and breasts. These and other considerations have long since led me to believe that the birds originally recorded by Dr. Allen were probably all Blue-winged Teal. In his 'Birds of Eastern North America' Mr. Maynard mentions the Red-breasted Teal only in the Appendix where (on page 520) he merely says: "Occurs west; accidental in Lou. and Fla." In the second edition of this work he includes the species in the main body of the text (on page 121), but with only the brief statement that it "is occasionally found in the Gulf States, even as far east as Indian River, Florida." He now writes me (under date of February 23, 1907) as follows:

¹ J. A. Allen, On the Mammals and Winter Birds of East Florida, Bull. Mus. Comp. Zool., II, No. 3, Oct., 1869, 363.

"During my first trip to Florida in 1868-69... I found two species of Teal very abundant about the head of Indian River (on the east side) in pools in the marshes. My note book says that these were *Nettion carolinensis* and *Querquedula cyanoptera*... Two or three [of the latter] were shot along the shore. These specimens were never skinned but were plucked and eaten as we were in need of provisions at the time. The birds taken, either young males or females, were strongly reddish in tinging on the tips of the feathers of the under parts. Until my second visit to the same place in the early 70's I did not find out that this tinging was due to a stain caused by iron-impregnated water of some pools which I had not seen on my first trip, but which the birds appeared to frequent. You know that many ducks become stained in this manner, but that was probably not known to me in my younger ornithological days, although I have seen it hundreds of times since.

"The reason why I include the Red-breasted Teal among the birds of Florida is on account of notes given me by Mr. Chas. Naumann of whom you know, who lived at Dummitt's for some years. He always insisted that he had taken adult males [of *Q. cyanoptera*] here... I am sure now, however, that I never saw the Red-breasted Teal in Florida."

In 1889 Mr. W. E. D. Scott published the following note: "Under date of November 12, 1888, Mr. J. W. Atkins of Key West writes me: 'Did I give you the record of a Cinnamon Teal taken here on November 1, 1887? I have the skin in my collection, and on October 24 (this year) I examined another of the species in the possession of a boy, who had just shot it in a pond near the town,'"¹ *i. e.*, Key West. If, as we are left to infer, this youthful gunner plucked and ate his bird, he probably committed no very serious act of vandalism, for the Teal which Mr. Atkins preserved and which is now in my collection,² is nothing more nor less than a

¹ Auk, VI, 1889, 160.

² I received this bird, with a number of others taken in Florida, directly from Mr. Scott. It still bears the original label on which is inscribed, in Mr. Atkins's unmistakable handwriting, "*Anas cyanoptera*, Key West, Fla. Nov. 1/88, J. W. Atkins." It will be observed that this date is just a year later than the one mentioned by Mr. Atkins in his letter to Mr. Scott. Nevertheless it is practically certain that the specimen is the same as that to which Mr. Atkins referred in this letter where, no doubt, the date of its capture was correctly given.

perfectly typical female of *Querquedula discors*, having the under parts colored with the rusty stain already described.

Mr. Arthur T. Wayne has been similarly misled by the presence of much rusty red (and also, as he writes me, by the somewhat exceptionally coarse markings) on the under parts of an adult female Teal which he shot at Mount Pleasant, South Carolina, on April 12, 1904. After having reported¹ this bird as an example of *Q. cyanoptera* he very kindly sent it to me for examination. Like the specimen taken by Mr. Atkins at Key West it is, without question, a Blue-winged Teal.

Still another eastern record of *Q. cyanoptera* remains to be considered. It is that by Mr. Samuel N. Rhoads² of "a fine specimen of a male Cinnamon Teal, still in the flesh," which he examined in Krider's gun store in Philadelphia. It was killed by Mr. Charles S. Hebard in Lake Iamonia, Florida, on or about February 18, 1893. Mr. Hebard, writing to Mr. Rhoads about the capture of this bird, says: "When I got to where it fell I was struck by its beauty and decided to have it mounted." This would indicate that it was not either a female or an immature male. Moreover Mr. Rhoads, in a letter to me dated December 8, 1905, asserts that his "remembrance is that" the specimen "was in nuptial or fully adult male plumage." If this were really so he could not have made any mistake with respect to its identification. It is notoriously unsafe, however, to trust implicitly to human memory in matters of this kind. On the whole the evidence given by Mr. Rhoads does not seem quite conclusive, although it certainly warrants the assumption that the bird killed by Mr. Hebard was probably a Cinnamon Teal. If the specimen is still in existence it should be reexamined and reported on by some competent ornithologist, for the record relating to it is apparently the only one remaining which affords anything like definite grounds for believing that the Cinnamon Teal has ever occurred in our South Atlantic States.

¹ Auk, XXII, 1905, 396.

² Auk, X, 1893, 362, 363.

ADDITIONAL NOTES ON THE BIRDS OF LEON
COUNTY, FLORIDA.

BY R. W. WILLIAMS, JR.

SINCE the publication of my last paper on the birds of Leon County, Florida (Auk, XXIII, 153), some further information has been obtained and additional observations made. Nine species are now recorded for the first time, and I add a few notes respecting species included in my former papers.

The numbers are continued in serial order from my last paper for the purpose of indicating readily the whole number of species recorded for the county.

174. *Gavia imber*. LOON.—Has been seen several times in late years on the larger lakes.

175. *Querquedula cyanoptera*. CINNAMON TEAL.—In volume X of 'The Auk,' p. 362, Mr. Rhoads records the capture of a Cinnamon Teal on Lake Iamonia, Florida, but does not designate the county, which, in this case, is very important since this lake, though large, is not so well known as to be readily located without more definite directions. The lake is in Leon County a few miles south of the Georgia line. This specimen was taken about February 18, 1893, by a Michigan sportsman who was at the time hunting snipe on the marshes of the lake. The bird was preserved and afterwards mounted. I have another record, more recent. On November 17, 1906, Mr. E. B. Garner of Tallahassee killed one on Lake Jackson. It was feeding with a flock of Green-winged Teal.

176. *Aythya americana*. REDHEAD DUCK.—Mr. E. B. Garner has taken several Redheads on Lake Jackson in the past few years.

177. *Aythya vallisneria*. CANVASBACK DUCK.—Mr. Garner and others whose identifications can not be successfully questioned have taken the Canvasback several times in the past few years on the larger lakes of the county.

Aythya affinis. LESSER SCAUP DUCK.—Dr. E. M. Brevard, who has had considerable experience in hunting ducks and is well posted on the Anatidæ, found a nest of this species on Lake Jackson in the summer of 1896. The duck was flushed from her nest and eight eggs. He says that it is not unusual to see wounded ducks of this species on the lake during the summer, and this would seem to explain the nesting of this bird so far from its summer haunts.

178. *Erismatura jamaicensis*. RUDDY DUCK.—This is one of the most numerous species of ducks found in the county during the winter and was omitted from my former papers through inadvertence.

179. **Guara alba.** WHITE IBIS.—Occurs regularly in the county during spring and summer, and I have reason to believe some of the cypress swamps in the western part of the county will be found to be its nesting haunts.

180. **Dryobates borealis.** RED-CKADED WOODPECKER.—This woodpecker is very locally restricted. Since my last paper was published I have found it in the northern and eastern portions of the county, always in tracts of pine land. My only opportunity to observe it has been in winter so I am unable to say whether or not it nests with us, but it is altogether probable that it is a constant resident in the county.

181. **Spinus pinus.** PINE SISKIN.—My first record of this bird for the county was made on January 6, 1907, while I was passing through McDougall's pasture. My attention was drawn to a number of Goldfinches that were watering in a little pool on the edge of the swamp, and to others perched in some small trees near by. I turned my glasses upon them and discovered several Siskins in their midst. The whole flock shortly flew to the sweet gum trees a little distance beyond. I followed and found the Siskins searching for food in the sweet gum burs, along with the Goldfinches.

Vireo solitarius. BLUE-HEADED VIREO.—This species is a winter resident with us. There was one in our yard during the whole of the past winter. It is not very abundant at any time and can be easily overlooked.

Vireo noveboracensis. WHITE-EYED VIREO.—This bird is with us throughout the entire year, but it is probable that the winter residents are those which have spent the summer in the north and that our summer residents pass further south in winter. There is always one in our yard during the winter.

Helminthophila bachmani. BACHMAN'S WARBLER.—In 'The Auk' for January, 1905, p. 85, Mr. Rehn of Philadelphia, noting my record of this bird for Leon County in the previous number of 'The Auk,' adds another instance of the occurrence of this species in the county. He says: "On March 22, 1904, while in company with Mr. Morgan Hebard of Thomasville, Georgia, I collected a male specimen of this species in a black gum swamp in the extreme northeastern section of Leon County, about four miles distant from the Georgia line. The individual taken was in company with several others which appeared to be the same species, but as the identity was not known until the specimen was in hand, no others were secured."

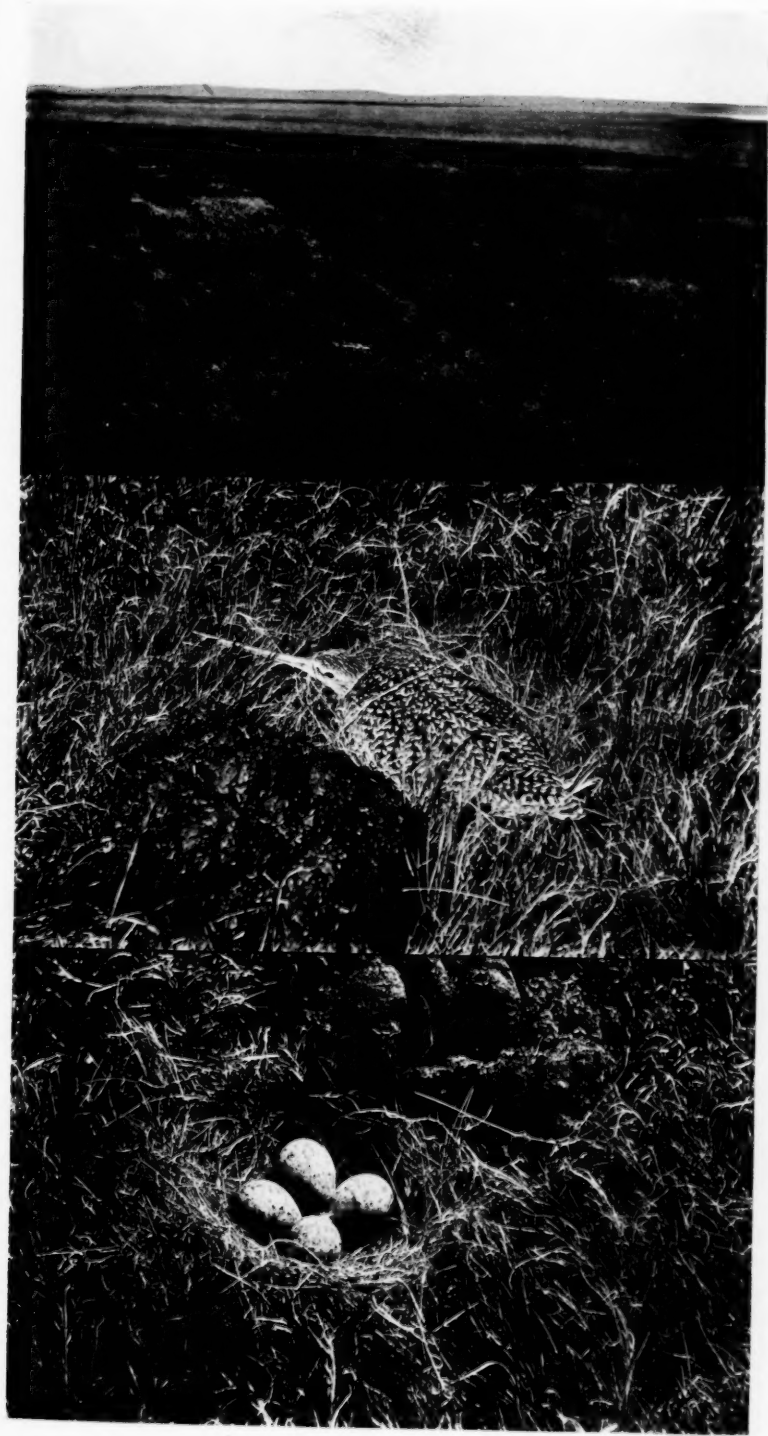
182. **Sitta carolinensis.** WHITE-BREASTED NUTHATCH.—I have often searched for this bird in our county, but until Dec. 23, 1906, I could not find it. On this date I recorded it in Choate's woods, a half mile from town. The bird was alone. A short time before this I had seen three of the birds so close to the eastern and western boundaries of the county that it was impossible to determine, at the time, whether they were in Leon, Jefferson, or Gadsden County, and I consequently did not claim them for Leon County.

THE MARBLED GODWIT ON ITS BREEDING
GROUNDS.

BY A. C. BENT.

Plate III.

IT WAS on the twelfth day of June in 1901 that I first made the acquaintance of this magnificent shore bird. We had been collecting for several days in some extensive sloughs bordering a large lake in Steele Co., North Dakota, which we have found exceedingly rich in bird life. Canvasbacks, Redheads and Ruddy Ducks were nesting in the bulrushes and flags, as well as numerous Coots, Pied-billed Grebes and Black Terns. Red-winged and Yellow-headed Blackbirds fairly swarmed through the reeds and filled the air with their ceaseless din. Sora and Virginia Rails were breeding about the edges of the sloughs, concealing their nests in the little tussocks of grass growing in the shallow water. The beautiful Wilson's Phalaropes were flitting about among these tussocks, and it was while hunting for their nests that we noticed, among the numerous noisy Killdeers and Western Willets flying over us, a strange hoarse note, strikingly different from either, as a large brown bird flew past, which we recognized as a Godwit. All doubts were soon dispelled by collecting my first specimen of a species I had often longed to see, and I could not help pausing to examine and admire the beautiful markings of its richly colored wings. We saw only four of these birds that day, but on the following day they became more abundant. There were about twenty of them flying about over the meadows, showing considerable concern at our presence, constantly uttering their peculiar cries, and showing so little regard for their own safety that we were led to infer that they were breeding or intending to breed in that vicinity. We spent some time looking for their nests, but, as we knew practically nothing about their nesting habits at that time, we were not successful in locating any nests. They may have been merely recent arrivals, possibly only transient migrants, but they should have been in their breeding grounds at this date or earlier.



MARBLED GODWIT.



But it was during my two recent trips to Assiniboia and Saskatchewan in 1905 and 1906 that I became more intimately acquainted with the Marbled Godwit in its summer home. That portion of northwestern Canada, lying north of Montana, which was formerly called Assiniboia, is now included in the new Province of Saskatchewan, and it was in the southwest corner of this province, along the line of the Canadian Pacific Railway, that my observations were made. To a casual observer, passing through this region in a railroad train, the country seems barren and uninteresting — an endless waste of bare rolling plains and low-lying hills, broken only by an occasional small frontier town, or by the scattered houses of the hardy ranchmen, who make a living by raising cattle, horses, and sheep, which are allowed to range at will over the unbroken plains.

But to the ornithologist this region is full of interest. It is well watered with numerous small streams, spreading out in many places over broad, grassy meadows, over which clouds of Black Terns are hovering; numerous ducks of various species may be seen swimming in the shallow sloughs, or jumping into the air, and flying off as the train alarms them. Every small pond-hole is sure to be occupied by one or more pairs of ducks, and the larger lakes and sloughs are full of water birds of various kinds. Alkali lakes and ponds, with their broad, whitish mud flats, are frequently passed, and these are generally tenanted by flocks of migrating shore birds, or by a few pairs of graceful and showy Avocets. Thus, though bird life may be scarce over the greater part of this region, in favorable localities, such as the vicinity of lakes and streams, birds are exceedingly numerous, rich in species, and abundant in numbers.

The lakes are generally wholly or partially alkaline, with barren, muddy, or stony shores, and without vegetation in or around them. But many of the larger lakes have fresh water streams running into them, and about the mouths of the streams are more or less extensive deep water sloughs, overgrown with tall bulrushes, and sometimes a few cat-tail flags. These form the great breeding grounds for wild fowl — Western, Horned and American Eared Grebes, Canvasback, Redhead and Ruddy Ducks, Franklin's Gulls, American Coots, American Bitterns and Yellow-headed Blackbirds; and the surrounding shores and meadows offer a

most congenial home for the breeding shore birds — Marbled Godwits, Western Willets, Bartramian Sandpipers, Wilson's Phalaropes, and Killdeers.

Along the lower courses of the streams, near the lakes, but sometimes extending for a mile or more back from the lake, are usually found broad, flat, alluvial plains, low enough to be flooded during periods of high water. These plains are more or less moist at all times, are exceedingly level, and are covered with short, thick grass only a few inches high. Such spots are the chosen breeding grounds of the Marbled Godwit, and, so far as our experience goes, the nests of this species are invariably placed on these grassy plains or meadows.

The Godwit makes no attempt at concealment, the eggs being deposited in plain sight in a slight hollow in the short grass. We found, in all, four nests of this species with eggs, had two sets of eggs brought to us by ranchmen, and found two broods of young. The first nest was discovered on May 29, 1905. We had been hunting the shores of a large alkaline lake, where a colony of Avocets were breeding on the mud flats, near the outlet of a deep, sluggish stream, and it was while following along the banks of this stream, as it wound its devious course down through a series of broad, flat meadows, that I flushed a Godwit out of the short grass only a few yards from the stream, and about one hundred yards from the lake. On investigation I found that she had flown from her nest, merely a slight hollow in the grass lined with dry grass, which had, apparently, been simply trodden down where it grew, without the addition of any new material brought in by the birds. Only two eggs had been laid, so we marked the spot for future reference and retired. On June 5 this nest was photographed, and the four eggs which it then contained were collected. The set is now in my collection, and may be described as follows:—The ground color is a rich olive buff on three of the eggs, paler on the fourth; the most richly colored egg is rather sparingly marked with spots and small blotches of dull tawny olive and pale drab; the other three are sparingly marked, chiefly about the larger end, with spots and small blotches of raw umber, mummy brown and pale drab or lilac; in shape they are all ovate pyriform; the measurements are as follows, in inches: 2.24 by 1.53, 2.29 by 1.52, 2.14 by 1.50, and 2.16 by 1.53.

While driving across a low, wet meadow, towards a reedy lake, on June 8, 1905, and when about two hundred yards from the lake, we were surprised to see a Marbled Godwit flutter out from directly under the horse, which was trotting along at a leisurely pace. We stopped as soon as possible, and found that we had driven directly over its nest, which barely escaped destruction, for it lay between the wheel ruts and the horses foot prints, one of which was within a few inches of it. The nest was in every way similar to the first one, the bird having beaten down the short grass to form a slight hollow in which the four handsome eggs had been laid in plain sight. We photographed the nest and collected the eggs, which are now in the collection of Rev. Herbert K. Job. On this same meadow, and on the edge of the prairie near it, we also found two nests of the Wilson's Phalarope, and a nest of the Bartramian Sandpiper, each containing four eggs.

On June 9, 1906, we visited the locality where the first nest was found, and I enjoyed a most interesting experience with an unusually tame individual of this normally shy species. While walking across the flat meadow near the creek, I happened to see a Marbled Godwit crouching on her nest beside a pile of horse droppings. She was conspicuous enough in spite of her protective coloration, for the nest was entirely devoid of concealment in the short grass. Though we stood within ten feet of her, she showed no signs of flying away, which suggested the possibility of photographing her. My camera was half a mile away in our wagon, but I soon returned with it and began operations at a distance of fifteen feet, setting up the camera on the tripod and focussing carefully. I moved up cautiously to within ten feet and took another picture, repeating the performance again within five feet. She still sat like a rock, and I made bold to move still closer spreading the legs of the tripod on either side of her and placing the camera within three feet of her; I hardly dared to breathe, moving very slowly as I used the focussing cloth, and changed my plate holders most cautiously; but she never offered to move and showed not the slightest signs of fear, while I exposed all of the plates I had with me, photographing her from both sides, and placing the lens within two feet of her. She sat there patiently, panting in the hot sun, apparently distressed by the heat, perhaps partially dazed by it, and much annoyed

by the ants which were constantly crawling into her eyes and half open bill, causing her to wink or shake her head occasionally. I reached down carefully and stroked her on the back, but still she did not stir, and I was finally obliged to lift her off the nest in order to photograph the eggs.

The nest was exactly like the others, a hollow in the grass and lined in the same manner by pressing down the grass into the cavity, which measured seven by six inches in diameter and was hollowed to a depth of about two inches. The four eggs which it contained were found to be partially incubated. They are now in my collection and may be described as follows: The ground color is pale olive buff or cream buff; three of the eggs are quite evenly marked with well defined spots of raw umber and mummy brown, and with numerous subdued spots of lilac; the fourth is heavily blotched with lilac gray, particularly about the larger end, over which are scattered numerous irregular markings and small spots of Vandyke brown; in shape they are ovate pyriform, and they measure 2.30 by 1.58, 2.37 by 1.60, 2.32 by 1.61, and 2.31 by 1.57 inches.

Another set of these eggs, also in my collection, was brought to us by a ranchman with whom we were staying. Their ground color is somewhat darker than either of my other sets, a rich greenish olive buff; they are rather sparingly marked with small dull spots of Vandyke brown, wood brown and drab; in shape they are slightly more pointed than the others and they measure 2.26 by 1.56, 2.21 by 1.57, and 2.31 by 1.59 inches.

The flight of the Marbled Godwit is strong, swift and direct; the head is usually drawn in somewhat, the bill pointed straight forward and the feet stretched out behind. In general appearance it closely resembles the Long-billed Curlew, which it nearly equals in size, the rich brown coloring in the wings being conspicuous in both species, but the long curved bill of the Curlew serves to distinguish it, even at a considerable distance, and the notes of the two birds are entirely different. The Marbled Godwit has a great variety of striking and characteristic notes. Its ordinary call note, when only slightly disturbed, sounds like *terwhit*, *terwhit*, *terwhit*, or *pert-wurrit*, *pert-wurrit*, or *godwit*, *godwit*, *godwit*, from which its name is probably derived; these notes are all strongly accented

on the last syllable, and are uttered almost constantly while the birds are flying about over their breeding grounds. When considerably alarmed these notes are intensified, more rapidly given, and with even more emphasis, *kerweck*, *kerwee-eck*, or *kerreck*, *kreck*, *kreck*, *kerreck*; sometimes they are prolonged into a loud, long-drawn out scream *quack*, *qua-a-ack*, or *quoick*, *quoi-i-ick*, somewhat between the loudest quacking of an excited duck and the scream of a Red-shouldered Hawk. There is also a more musical, whistling note, less often heard, sounding like the syllables *kor-koit* or *ker-kor-koit*, *korkoit*, the accent being on the *kor* in each case; this note seems to indicate a more satisfied frame of mind and is much more subdued in tone. All of these notes are subject to great individual variation, and, as the Godwits are very noisy birds, we were given ample opportunities to study them, but to write them down in a satisfactory manner is not so easy.

Like all of the shore birds, the Marbled Godwit is exceedingly demonstrative on its breeding grounds, flying out to meet the intruder as soon as he appears, making fully as much fuss at a distance from its nest as near it, and giving no clue as to its exact location. The cries of one pair of birds often attract others, and I have seen as many as eighteen birds flying about at one time in an especially favorable locality. It shows no signs of fear at such times, often alighting on the ground within ten or fifteen yards, standing for an instant with its beautifully marbled wings poised above it, a perfect picture of parental solicitude. Even while feeding on the shores of the lakes we could frequently walk up to within a few yards of them, and Mr. Job succeeded in photographing several of them in this way.

Though we looked diligently for the young, we did not succeed in finding any until June 27, 1906. Dr. Bishop and I were driving across some extensive wet meadows, ideal breeding grounds for Marbled Godwits, when we saw a Godwit, about a hundred yards ahead of us, leading two of its young across a shallow grassy pool; we drove towards them as fast as we could, but as we drew near the old bird took wing and the young separated, moving off into the grass in opposite directions. They had evidently been well schooled in the art of hiding, and were well fitted by their protective coloring to escape notice, for, though we secured one of

them readily enough while it was still running, the other disappeared entirely, right before our eyes and within ten yards of us. Its disappearance seemed almost miraculous, for there was practically nothing there to conceal it, as the grass was quite short, and there were no shrubs or herbaceous plants of any kind in the vicinity. We searched the whole locality carefully and thoroughly, but in vain. The youngster may have been crouching flat on the ground, relying on its resemblance to its surroundings, or it may have taken advantage of some slight inequalities in the ground and skulked away further than we realized. Later in the day we found another pair of Godwits, in a similar locality, with two young, one of which we secured. The young were in the downy stage and apparently not over a week old. They showed unmistakable Godwit characters, particularly in the shape of the head and bill, and the long legs and neck. They were covered with soft down, pinkish buff in color, more pronounced on the sides and neck, paler ventrally, and almost white on the throat, chin, and sides of the head. The occiput, cervix, back, rump and wings were heavily blotched with seal brown, or clouded with hair brown, the latter color shading off gradually into the buff on the sides, where the first plumage was beginning to appear. There was a narrow loreal stripe on each side, and a medium crown stripe of seal brown, the latter running from the base of the bill to the occiput.

As soon as the breeding season is over, or even before all the broods are fledged, the Marbled Godwits begin to gather into flocks and become much more wary. Even as early as June 27, 1906, we saw as many as thirty-six birds in one flock, but, as we did not see any young birds among them, we inferred that these must have been birds whose eggs or young had been destroyed.

As I have always had to leave for the East before the southward migration began, I am unable to give any information on this subject from personal observation, but Dr. Louis B. Bishop has kindly placed at my disposal his notes relating to this movement.

At Stump Lake, North Dakota, in 1902, he noted on July 28 a flock of about one hundred Marbled Godwits, chiefly adults, all that were taken being old birds; and on July 30 he saw a flock of about fifty, which he assumed to be composed chiefly of young birds, all that were taken being in juvenile plumage. At the same locality



Max Brooks.

HYBRID GROUSE.

Dendragapus obscurus richardsonii + *Pedieretes phasianellus columbianus*.

in 1905, he saw on July 26 a flock of about forty, both adults and young, all that were collected being young birds; on August 2, *all* of these birds had disappeared. This exact locality, a sandy point at the western end of the lake, was visited only on the above dates. These birds were undoubtedly migrants, as they were not known to have bred in that vicinity.

After I had left Saskatchewan, Dr. Bishop visited the breeding grounds of the Marbled Godwits, and on July 3, 1906, found adult birds tolerably common, but they had all departed two days later. At Big Stick Lake, from July 18 to 21, 1906, he saw large flocks of adult Godwits containing hundreds of birds, but on July 22 very few were left. He also states that adults reach the North Carolina coast in the middle of July, as he has in his collection adults taken on July 11 and 27, 1904, and that young birds appear about a month later, as he has specimens taken August 10 and 19, 1904.

Evidently the Godwits move off their breeding grounds as soon as the young are able to fly, those birds which have been unsuccessful in rearing their young being the first to leave, and forming the vanguard of the early migration in July. Probably most of the adults start on their southward migration before the end of July, and well in advance of the young, the later flight being composed almost entirely of young birds, and moving more deliberately.

A HYBRID GROUSE, RICHARDSON'S + SHARP-TAIL.

BY ALLAN BROOKS.

Plate IV.

THROUGH the courtesy of Mr. C. deB. Green I have had the privilege of examining a most interesting hybrid between *Dendragapus o. richardsonii* and *Pediæcetes p. columbianus*, shot at Osoyoos, B. C.

Roughly speaking this bird may be said to have the coloration

on the upper surface of a female Richardson's Grouse, and on the lower of a male Sharp-tail. In size it is between the two species with the following measurements: ♂ ad. wing, 8.5 inches; tail, 5.5 inches; middle toe and claw, 2.05 inches; culmen, .55 inches.

The tail is evenly graduated, the center rectrices .85 inches wide, outer .55 inches, falling short of the center pair by 1.5 inches. Feet with pectinations well developed and claws very long, middle claw .65. Feathers on tarsi long and dense, reaching beyond the first joint of middle toe. A conspicuous 'comb' over the eye deep yellow.

The marking on crown of head, hind neck, dorsal region, and scapulars very much resembles that of an adult female Richardson's Grouse; rump between the two species; wing coverts edged and tipped with white, but with none of the conspicuous round white spots of the Sharp-tail. Tail black, the central pair of feathers with a broad band of freckled gray on tip; outer feathers with diminishing tips of grayish white.

The whole under surface is very similar to that of a male Sharp-tailed Grouse; the V-shaped markings on the pectoral region are broader, and the lower tail coverts almost immaculate. The feathers on the center of abdomen are heavily marked with smoke gray down their centers.

I am also indebted to Mr. Green for the following account of its capture:

"On Sept. 15 I was going out for duck, as I had decided to shoot no Prairie Chicken that season because of the wet hatching period the spring before. On my way I passed Hiram Inglees's orchard and went in to get some fruit; while eating plums this bird came down off the mountain and flew all alone into the orchard and lit in the longish grass. I took it for a blue grouse, and went over; it was very tame, and all I could see was its head, which seemed all blue grouse, so I flushed it, intending to put it in the bag, but it got up so quietly and so near that I did not shoot, and it lit on the orchard fence. As it went off I was puzzled at it and so followed up to see it again; on the fence it bothered me more, for one way it was blue grouse, and the other way chicken, and both ways tame. I was not going to kill it unless it would fly and go fast, and I let it go off again without intending to shoot, but just

as it was almost too far I tumbled to it, and killed it by a lucky snap. The flesh was exactly half way, being neither white nor brown.

"Some days after, Hiram told me he had seen the bird repeatedly the spring before, dancing with the Prairie Chickens in his garden.

"The crop was full of leaves of the mountain laurel, and I know he must have gone higher than chicken go, to get them, but something called him down into the orchard where Blue Grouse never are seen except occasionally in July or August."

Mr. Green is of the opinion that the cross is between male Richardson's Grouse and female Sharp-tail, but the appearance of the specimen inclines me to think it is a case of a female Blue Grouse wandering down in the spring into the Sharp-tail country; as in my experience a hybrid generally favors the male parent.

The specimen has been presented by Mr. Green to the Provincial Museum at Victoria.

ASPECTS OF BIRD DISTRIBUTION IN LOUISIANA AND MISSISSIPPI.

BY HENRY H. KOPMAN.

THE writer will explain at the outset that this article has reference chiefly to the southeastern part of Louisiana and to the coast of Mississippi. It is his belief, however, that when he presents a view of some of the characteristic conditions of these sections he will call attention to facts almost if not quite unparalleled in the experience of bird students in other parts of the United States.

Assuming the normal, settled summer bird population of these regions to be the primarily characteristic element in their avifauna, we recognize its chief peculiarity in the dearth of species represented, frequently offset by a great abundance of individuals, but in other cases, much rarer, resulting in an altogether attenuated state of bird-life. The significance of the periods of migration in such regions is therefore obvious, and will be fully discussed later on.

As the regions under consideration fall naturally into two distinct topographical types, it will be convenient, first, to give a brief description of each type, and, second, to discuss the subject chosen in relation to each type separately.

The coast district of southeastern Louisiana presents an absolutely flat surface, of a very fertile alluvial soil formation, supporting, with varying circumstances, marshes, swamps, or normal deciduous forest growths, of rather monotonous uniformity in any case. At distances varying from fifty to seventy-five miles from the coast this formation is replaced by slightly higher ground presenting an entirely different soil formation wooded chiefly with pine, especially the long-leaved pine (*P. palustris*). This latter is the one aspect of coastal Mississippi, and in the case of that State requires to be treated separately only because there such country borders the seashore.

The essential uniformity of coastal southeastern Louisiana, the area centering about the delta of the Mississippi River, is revealed by the fact that all arboreal species occur with almost equal abundance in every part of this region. For a region of interest so special, this section is very extensive. From points near the mouth of the Mississippi westward to Franklin and New Iberia, and thence eastward and northeastward to New Orleans and Baton Rouge, lie the boundaries of a region haunted indifferently in all parts during the nesting season by a practically invariable group of woodland species — the Yellow-billed Cuckoo, Southern Hairy, Downy, Red-bellied, and Pileated Woodpeckers, Crested and Green-crested Flycatchers, Cardinal, Red-eyed and White-eyed Vireos, Prothonotary, Parula, Sycamore, Kentucky, and Hooded Warblers, Carolina Wren, Tufted Titmouse, and Carolina Chickadee. A varying number of species that frequent open situations, such as the Orchard Oriole, Florida Grackle, and Blue-gray Gnatcatcher, are to be found throughout the same extent of country, but as their distribution depends more or less on artificial conditions, it is of less importance in determining the biotic questions involved.

The appearance of the interior of a deciduous forest in lowland Louisiana would readily suggest a rather limited avifauna in the nesting season at least. Elm, ash, tupelo, cypress, dogwood

(*Cornus stricta*), red maple, box elder, sweet gum, red, live, and water oaks, hackberry, cottonwood, and sycamore constitute the bulk of the sylvia. Maple, elm, tupelo, and water oaks preponderate, growing very closely, and exhibiting great vigor, though the size of the elms and maples especially is not usually large. In these moist shady woods, the character of insect life that particularly attracts our smaller insectivorous birds is sparingly represented. There is a rather oppressive and monotonous side to the life here, which is reflected more or less closely in the behavior of the birds. The conditions being almost identical in all spots, and food being equally abundant everywhere, the stations of nesters are distributed with decided regularity. A tendency to colonize in the breeding season is of the rarest occurrence. The same conditions that render colonization unnecessary, that is, the uniformity of the environment, frequently give rise to rather wide ranging on the part of nesters. The preoccupation of the breeding bird is less conspicuous than usual, and intimate acquaintance with their home life more difficult to arrive at. As a matter of fact, these virgin lowland woods do not always serve for nesting haunts of the several species that frequent them in greater or less abundance. Where these forests border on cleared land, lower and more varied growths appear, and such spots frequently become meeting places of the woodland breeders and the more open-loving species. Forests without any undergrowth whatever attract practically no small species as breeders except the Woodpeckers, the Crested Flycatcher, Green-crested Flycatcher, Cardinal, Summer Tanager (?), Red-eyed Vireo, Parula Warbler, Prothonotary Warbler, Sycamore Warbler; the Parula Warbler nests in such woods wherever Spanish moss occurs, the same being true of the Sycamore Warbler, while the Prothonotary Warbler selects its usual sites, as do the Titmice and Woodpeckers. The Flycatchers, Cardinal, Summer Tanager, and Red-eyed Vireo necessarily nest high under these circumstances.

Although uninterrupted growths of forest trees of the kinds already designated cover a large part of the surface of southeastern Louisiana not in cultivation, there are also considerable areas primarily occupied by lower, more thicket-like growths, consisting of small maples, tupelos, etc., interspersed with palmetto,

smilax, dogwood (*C. stricta*), and several vines, especially *Tecoma*, *Rhus*, *Cissus* and, of course, *Rubus (villosus)*. Such growths commonly occupy the lowest and wettest parts of the delta region, and often border heavy cypress swamps. The Yellow-billed Cuckoo, Cardinal, White-eyed Vireo, and Prothonotary and Hooded Warblers are almost distinctive in this type of country. Of somewhat less certain occurrence are the Southern Hairy, Downy, and Red-bellied Woodpeckers, Crested Flycatcher, Red-eyed Vireo, Parula, Sycamore, and Kentucky Warblers, Florida Yellow-throat, Carolina Wren, Tufted Titmouse, Carolina Chickadee, and Blue-gray Gnatcatcher. There is, of course, more or less local variation to be considered in this connection.

Occasionally an undergrowth of dogwood, haw, deciduous holly, and possibly one or two rarer shrubby growths occurs in heavy woods of the prevailing character. Here, again, the Hooded Warbler is plentiful, and frequently the Kentucky Warbler. If a growth of switch cane (*Arundinaria tecta*) is also present, it proves very attractive to both these species, and seems to supply an indispensable condition for the presence of Swainson's Warbler, which, however, is seldom found even where the switch cane occurs. Where the distinctive woodland has these undergrowths, the Wood Thrush is most apt to occur as a breeder.

The summer bird-life of the delta region presents several further aspects as seen in the cypress swamps, in the marshes of the immediate coast district, and in the midst of cultivation and about the edges of the swamps and woods. Although the cypress occurs in practically all situations throughout the section under consideration, heavy swamps of this tree occupy rather restricted areas. Their interest from an ornithological point of view is small. Their principal nesting inhabitants are the Woodpeckers, the Green-crested Flycatcher, and the Prothonotary, Parula, Sycamore, and Hooded Warblers, of which the Sycamore and Prothonotary Warblers are the most conspicuous.

The marshes of southeastern Louisiana present no especial peculiarity. Red-winged Blackbirds and Boat-tailed Grackles are abundant in nearly all situations. The Florida Yellow-throat is uniformly distributed; the Long-billed Marsh Wren and Louisiana Seaside Sparrow are somewhat local in their occurrence. In

small numbers, the Orchard Oriole is thoroughly at home in the marshes, especially where bushy growths occur, and in such places in fact various other species not primarily marsh birds may be found. This is particularly true of the Yellow-billed Cuckoo, Kingbird, Cardinal, White-eyed Vireo, Titmice, Mockingbird, Carolina Wren, and Blue-gray Gnatcatcher.

The sugar, rice, and trucking industries of lower Louisiana have effected, of course, certain very decided modifications in the nature of the growths. About the edges of most sugar plantations there is usually more or less land that has been roughly cleared in anticipation of its final cultivation. The rank productiveness of such soil, commingles in one astonishing mass of confusion the native lesser growths of the woods, and the escapes from the pastures, the ditches, and the railroads. Willow, button bush, elder, blackberry, tall coarse weeds, bindweeds, grasses, sedges, leguminous plants both native and introduced, and all the common native vines make almost impenetrable thickets. Even where introduced plants have gained small foothold, the growths are always more tangled on the edges of the fields than in the woods, and in either case, the bird-life is about the most profuse to be discovered in summer. The Yellow-breasted Chat is attracted almost exclusively to spots of this description. The plantation bird-life adds at least half a dozen other species to those occurring in summer by virtue of the native constitution of the country. In this category may be placed the Kingbird, Meadowlark, Cowbird, Indigo Bunting and Bluebird, which are commonest towards the western and northern limits of the delta region. The same is true of the Dickcissel, which, however, is much rarer than the others. The Painted Bunting is reasonably common in all localities, but most so towards the west. The distribution of the Summer Tanager throughout this region is decidedly irregular; there are few spots of woodland suited to its habits and it occurs most frequently among the groves of towns and plantations. The Wood Pewee has somewhat the same distribution. The Towhee is more or less common in summer about the edges of the woods except in the wetter localities. Considered with reference to the delta region as a whole, however, it can hardly be called a well established breeder there.

Before proceeding to the consideration of the relation of migration to this region, it will be well to give a list of the land birds breeding there, summarizing the preceding remarks: Resident species are indicated by an R: Bob-white, R; Wild Turkey (?); Mourning Dove, R; Turkey Buzzard, R; Black Vulture, R; Swallow-tailed Kite; Mississippi Kite; Sharp-shinned Hawk (?); Florida Red-shouldered Hawk, R; Bald Eagle, R; American Osprey, R; American Barn Owl, R; Florida Barred Owl, R; Florida Screech Owl, R; Great Horned Owl, R; Yellow-billed Cuckoo; Belted Kingfisher, R; Southern Hairy Woodpecker, R; Downy Woodpecker, R; Pileated Woodpecker, R; Red-headed Woodpecker (local), R; Red-bellied Woodpecker, R; Flicker, R (rare in summer); Nighthawk (rare as a breeder in this region except towards the west); Chimney Swift, Ruby-throated Hummingbird, Kingbird, Crested Flycatcher, Wood Pewee, Green-crested Flycatcher, American Crow, R; Fish Crow, R; Blue Jay (distribution rather local), R; Cowbird, R; Red-winged Blackbird, R; Southern Meadowlark, R; Baltimore Oriole (occurs rarely as a breeder about the northern limit of the region); Purple Grackle (is resident about Baton Rouge); Florida Grackle, R; Boat-tailed Grackle, R; Grasshopper Sparrow (commonest towards the north and west); Louisiana Seaside Sparrow, R; Lark Sparrow (?); Field Sparrow (nests about Baton Rouge and possibly elsewhere); Towhee, R; Cardinal, R; Indigo Bunting; Painted Bunting; Dickcissel; Summer Tanager; Purple Martin; Rough-winged Swallow (commonest towards the north and west); Loggerhead Shrike (if it breeds in this region, it does so with extreme rarity); Red-eyed Vireo, Warbling Vireo (is decidedly local; common at New Orleans, and probably at other points on the Mississippi); Yellow-throated Vireo (may breed about the northern limit of the delta region); White-eyed Vireo; Prothonotary Warbler; Swainson's Warbler (positive evidence of the nesting of this species in the section under consideration is lacking); Parula Warbler; Yellow Warbler (occurs rarely as a breeder about the northern limit of this section); Sycamore Warbler; Kentucky Warbler; Florida Yellow-throat, R; Yellow-breasted Chat; Hooded Warbler; Mockingbird; Carolina Wren, R; Long-billed Marsh Wren, R; Tufted Titmouse, R; Carolina Chickadee, R; Blue-gray Gnat-

catcher, R; Wood Thrush; Bluebird, R (local and never very common).

As the writer has discussed the subject of migration in Louisiana at some length in other papers appearing in 'The Auk,' he will merely restate in general terms what has appeared there, and then illustrate with several concrete instances. The substance of this matter is that purely transient species are rare in spring in the delta region, but much commoner in fall. The presence of such forms is limited largely to the latter part of spring, and even then occurs with more or less rarity and irregularity. There are rarely more than two or three days of comprehensive migrational activity between March 15 and April 15. In making many spring expeditions in the vicinity of New Orleans the writer has found it the rule that between the dates mentioned, only resident, summer visitor and lingering winter visitor species will be observed. On one of the seemingly most favorable days I have ever been afield in southern Louisiana, April 6, 1895, the only exclusively transient species I made certain of seeing were the Ovenbird and the Water-thrush! The day was warm and showery, with soft south winds, and seemed to supply exceedingly favorable conditions for migration; the weather was essentially spring-like, of the kind that gives the greatest impetus to the full development of all vernal resources, yet in no wise summery. All the familiar birds were present in great numbers; many, in fact, seemed just to have arrived, and the probability was that there were many transient individuals among those observed; but the fact remained that only a very slightly different element was added to the settled avifauna of the season. Viewed as an example of summer bird-life, however, the species observed were of prime significance. The songs of White-eyed Vireos, Prothonotary, Parula, Hooded, and Kentucky Warblers mingled incessantly; the notes of the Red-eyed Vireo and Sycamore Warbler were somewhat less obtrusive. These species, with the possible exception of the Sycamore Warbler, greatly outnumbered all other forms in the description of country first traversed, the normal moist woodland of the lowlands; but on reaching a tract of slightly higher and more varied woodland, with more undergrowth, we found Crested Flycatchers, Catbirds, and Brown Thrashers, while Summer Tanagers and Wood Thrushes were

unusually plentiful. Here, however, Parula and Hooded Warblers were, if anything, commoner than before, while the two Vireos were present in great abundance. It was in this neighborhood, that the Ovenbirds were seen. There was another species whose presence, chiefly in the open, evidenced that the time for a general passage of transients was ripe. This was the Indigo Bunting. While this species breeds in southeastern Louisiana, it is never common in most localities except during migration; individuals in all stages of plumage, including many old males, were observed. Tree Swallows had reached the height of their spring abundance also, and it is of interest to note that the history of their spring movements reflect very closely many stages of the general vernal advance of birds in southern Louisiana. Though this trip proved so unproductive as an opportunity for the observation of mid-spring transients, the largest number of species yet observed under somewhat similar conditions, and at the same time and place, include only the Black-and-white and Cerulean Warblers and the Redstart as exclusively transient species.

After the middle of April, the conspicuous occurrence of transients is by no means so rare. As explained by the writer in a previous paper, the presence of transients at this season usually occurs with fresher weather. Yet even on these occasions, I have never found any of the transients decidedly and uniformly common except Yellow Warblers, Catbirds, and Gray-cheeked, Olive-backed, and Wilson's Thrushes. At various times I have seen scattering Baltimore Orioles, Rose-breasted Grosbeaks, Scarlet Tanagers, and Black-and-white, Blue-winged, Golden-winged, Tennessee, Magnolia, Cerulean, Chestnut-sided, Bay-breasted, Blackburnian, and Black-throated Green Warblers, and Redstarts, but never the pervading hosts of these species observed at the height of spring in the north. When occurring, these species seldom if ever resort to the ordinary woodland, but usually to the edge of the woods, and to groves and thickets in the midst of cultivation. The extreme refinement of such creatures in their susceptibility to environment during the season of migration was very plainly illustrated to me by an incident which I will relate. On April 21, 1905, I visited a section of country just across the Mississippi from New Orleans, a locality, in fact, which I have explored

with profit on many occasions, and to which I have already referred. The morning was quiet and gray, but about noon a warm south-east breeze sprang up. The conditions of early summer seemed about to settle down upon the country. The expectation of observing any unusual birds seemed small, as, in the light of all previous experience, the weather was scarcely suitable for the movement of late transients. Making my way over the route I had always been accustomed to follow, I found only what I had expected, excepting a few Tennessee Warblers at one spot on the edge of the woods. On the edge of a large sugar plantation, lying at the usual limit of my expeditions through these woods was some newly cleared land, however, and in one place it was bordered by a rather varied thicket that had grown up on the lighter, better drained soil. Water oaks, low live oaks, honey locust, with some hackberry, sycamore, dogwood (*C. stricta*), haw, etc., formed an open wood, with brambles and other moderately thick undergrowth, forming an ideal resort for birds, and not only most of the customary species were found here, but the following ten purely transient forms: Rose-breasted Grosbeak, Scarlet Tanager, Yellow-throated Vireo, Black-and-white Warbler, Worm-eating Warbler, Tennessee Warbler, Chestnut-sided Warbler, Black-throated Green Warbler, Ovenbird, and Redstart. The thicket in which they were found contained familiar trees of the region, but there was an obvious difference between this spot and all the surrounding country. The entire extent of the place was only an acre or so; on two sides it was bordered by cleared land, on a third by a brake of switch cane, and on the fourth by an almost uninterrupted growth of sweet gum, in itself an unusual circumstance for the delta region. Whether this little association of species seen in the thicket was making a sojourn of several days was impossible to decide positively, but the probabilities inclined that way, as the weather had been stable for several days. The incident is unique in my experience.

Autumnal bird-life in the delta region is rather more varied on the whole than is that found in spring. From the latter part of July until November 1, transients of one species or another are nearly always present in considerable numbers. In the earlier part of the season the bulk of these birds are Kingbirds, Barn

Swallows, Black-and-white Warblers, Yellow Warblers, Water-thrushes and Redstarts; later come Indigo Buntings, Magnolia and Tennessee Warblers, Catbirds, and Olive-backed Thrushes, with variable but usually small numbers of Chestnut-sided, Bay-breasted, Blackburnian, and Black-throated Green Warblers. Coastwise, the Bobolink is very common in fall.

The common mixed woodland of the delta region is rather more uninteresting in fall than in spring; by September most of its few characteristic birds have grown inconspicuous; the greatest concourses of birds, summer visitors and transients alike, are to be found then in or near open situations. The Hooded Warbler holds its stations the most closely. The Prothonotary Warbler ranges rather widely as early as July, and in willow-dotted fields I have observed individuals in obvious transient progress during that month. The Parula Warbler is very variable in this respect, though their general tendency is to seek the open even more than during spring and summer. The deep woods in Louisiana, in fact, are never the characteristic situation in which to find this species.

Rank growths of tall weeds, especially elder, goldenrod, and 'blood-weed' (*Ambrosia trifida*), along ditches and about the edges of fields, often prove attractive observing grounds during the fall; warblers seem especially drawn to such places.

It is a strange circumstance that the characteristic woodland of the delta region should harbor at least as many birds in winter as it does in summer; as a matter of fact, there are probably more individuals quartered in these woods in winter than in summer. Woodpeckers, Blackbirds, Goldfinches, White-throated and Swamp Sparrows, Blue-headed Vireos, Orange-crowned and Myrtle Warblers, Titmice, Thrashers, Wrens, Hermit Thrushes, Robins, and Kinglets frequent the bare woods about as freely as they do the open and thickets of partially evergreen vines and bushes, such as wax myrtle, brambles, small oaks, baccharis, and smilax. The only species that will not be found in these woods in winter are those invariably found in fields in other regions: the Meadowlark, Savanna Sparrow, and American Pipit; the Palm Warbler, the Mockingbird and the Bluebird, of course, should be added to this list of exceptions, and probably both the Long-billed and Short-billed Marsh Wrens. The Winter Wren, the House Wren, and

Bewick's Wren are more commonly found about the edges of the woods; any moist ground with low cover is freely haunted by Swamp Sparrows in southeastern Louisiana. The Pine Warbler, which never breeds in the delta region, of course, is not common there even in winter. When occurring, it is usually seen about thickets of deciduous trees.

Before concluding this paper with a consideration of the long-leaved pine flats region in Louisiana and Mississippi, the writer wishes to restate the chief peculiarity of the delta region as being the uniformity of its woodland where undisturbed by agricultural operations, and the lack of variety in its breeding birds. Though the pine flats region presents a naturally more continuous topography than the delta woodland, which is interrupted by marshes and deep cypress swamps, and though it is less affected by agriculture, yet within itself it presents a considerably more varied appearance than the woods of the delta region; this is especially true of the pine flats region in southeastern Louisiana; its strictly indigenous avifauna is likewise more varied if less abundant than that in the delta section. The pine flats region, though low, is scarcely level even at its extreme lower border, and rises gradually northward to the long-leaf pine hills region; consequently, it shows two principal growths; (1) the long-leaf and kindred pines, occupying the greater part of the surface; (2) a mixed growth occurring along small streams and in depressions, and composed chiefly of magnolia (especially the 'sweet bay'), red maple, black gum (*Nyssa*), sweet gum, water oak, holly, wax myrtle, *Cyrilla*, and a variety of ericaceous shrubs, including *Azalea*, *Clethra*, and *Vaccinium*. In some places, dogwood and a variety of oaks dispute the higher ground with the pines. Of the resident species of birds found in this region, several are restricted almost entirely to the pines. These are the Red-cockaded Woodpecker, the Meadowlark, Loggerhead Shrike, Pine Warbler, Brown-headed Nuthatch, and Bluebird.

The summer visitor species of birds found in this region are attracted chiefly to the mixed growths, and, of course, do not differ very materially from those found in the delta region. The Broad-winged Hawk is common; the Nighthawk is rather common, and nests in the open pinewoods; the Chuck-will's-widow is com-

mon in the bottoms; the Chimney Swift is common; the Hummingbird is rare; the Kingbird, Crested Flycatcher, and Wood Pewee are all common, nesting in various situations; the Green-crested Flycatcher nests in the broad-leafed growths in the bottoms; the Orchard Oriole is found about homes and farms; the Summer Tanager is common and uniformly distributed; the Purple Martin is common; the Red-eyed Vireo is common and restricted to broad-leafed growths; the White-eyed Vireo frequents the undergrowth; the Prothonotary Warbler is rather common, as are also the Parula, Kentucky, and Hooded Warblers; few favorable situations for the Sycamore Warbler occur; the Wood Thrush is distributed rather irregularly and is never very common as a nester.

In addition to the resident species previously mentioned in connection with the delta region are the following not found there: Wild Turkey; Cooper's Hawk (?); Sharp-shinned Hawk (?); Chipping Sparrow (uncommon in summer); Brown Thrasher; White-breasted Nuthatch.

There is little doubt that of the summer visitors to the delta region, the Warbling Vireo is entirely absent in the pine flats region; the Painted Bunting is rare; while it is doubtful whether the Purple Grackle, Field Sparrow, and Dickcissel breed in the pine flats region. Other species breeding freely in the delta region have a more restricted summer range in the pine flats region; the Red-winged Blackbird is unusual except on the coast of Mississippi and along the rivers; the Florida Grackle is local and never very common; the Boat-tailed Grackle is found chiefly along the coast of Mississippi; the Florida Yellow-throat finds suitable situations chiefly on the coast of Mississippi and along the rivers; the Long-billed Marsh Wren occurs chiefly along the coast of Mississippi.

The course of the migrations in the pine region is much less erratic than in the delta region; exclusively transient forms are decidedly commoner in spring, and in fall likewise, there is a greater variety of steadily common transient species than in the delta region; in all cases, however, the species occurring as transients are much the same as in the delta region. When present these transients resort chiefly to the broad-leafed growths. Of the species decidedly more common in the pine regions during the migrations than in the delta region, the following should be espe-

cially noted: Alder Flycatcher, Least Flycatcher, Scarlet Tanager, Yellow-throated Vireo, Chestnut-sided Warbler, Blackburnian Warbler, Black-throated Green Warbler, Cerulean Warbler, Prairie Warbler, Redstart, Catbird, Wilson's Thrush and Olive-backed Thrush. Species somewhat less common during migration in the pine flats region are the Indigo Bunting and Tree Swallow.

The winter bird life of the pine region is not essentially different from that of the delta region; the greatest difference appears in the case of the sparrows; the Chipping Sparrow, which is never found in the delta region, and which is only a casual breeder in the pine flats region, becomes very abundant there in winter; the Song Sparrow, which is almost unknown in the delta region is sparsely distributed in the pine flats region; the Junco is found sparingly in the upper part of the pine flats region; the Savanna, Swamp and White-throated Sparrows are very much less common than in the delta region; the Vesper Sparrow is much commoner; the Pine Siskin, Purple Finch, and White-crowned and Fox Sparrows are about equally rare in both sections. The Palm Warbler is commoner in the pine region, especially in Mississippi. The Blue-headed Vireo and Orange-crowned Warbler, two species characteristic of the delta region in winter, are almost entirely absent from the pine flats region, perhaps entirely so in the case of the Orange-crowned Warbler. The Brown Creeper, however, is commoner in the pine region. From the nature of the country, Pipits are necessarily less common in the pine flats region. In all other essential respects, the winter bird life of the two sections is identical. It should be added, that among the winter visitors to the pine flats region as among most other elements of its bird population, the deciduous growths attract the greater variety of species.

UNUSUAL ABUNDANCE OF THE AMERICAN GOSHAWK (*ACCIPITER ATRICAPILLUS*).

BY RUTHVEN DEANE.

REPLACING the notable migration of the Snowy Owl in the winter of 1905-06, we have this season been visited by an unusual influx of these bold robbers of our game and looters of the poultry yard. I believe there has not been such a flight since the fall and winter of 1896-97; when at that time they were particularly abundant in portions of New England, as they have been the present season.

It is reasonable to suppose, as in the case of the owls, that a lack of their favorite food forced them south of their usual range. All specimens examined are reported in good condition, though in some cases the stomachs have been entirely empty. I have obtained most of my information from taxidermists, and to them as well as to others I express my hearty thanks for their assistance and for records of some two hundred and seventy-five specimens.

The S. L. Crosby Co., taxidermists, Bangor, Me., report under date of Feb. 1, 1907, having received from twenty-five to thirty specimens. The first ones were sent in early in the season, the last two on Feb. 1, 1907. This number exceeded any previous year, and nearly all specimens were in adult plumage.

Mr. Wm. Cooper, taxidermist, Milo, Me., writes under date of Feb. 27, 1907, that he had received seven specimens of the Goshawk this winter prior to Dec. 25, 1906, but they ceased coming in after the weather became severe.

Mr. Walter D. Hinds, taxidermist, Portland, Me., writing under date of Feb. 8, 1907, informs me that twenty-five specimens of the Goshawk had been sent to him since Oct. 26, 1906, they having been received from Cape Elizabeth and Damariscotta, Me., Gorham, N. H., and other points. All were adult birds.

Capt. Herbert L. Spinney, Keeper of Seguin Light Station, Me., writing under date of Feb. 15, 1907, states that these hawks have been quite abundant in Sagadahoc County, Me., during the past fall and early winter, and while he had seen only two on Seguin

Island and one on the mainland, he had known of a number seen at other points.

Mr. M. Abbott Frazar, taxidermist, Boston, Mass., writes under date of Feb. 1, 1907, that the present flight of Goshawks had exceeded any in his experience; up to that date he had received over seventy-five specimens for mounting. They were sent in from all over the country, one from as far south as Virginia. Only three of this lot were in immature or in mixed plumage.

Mr. W. P. Conger, taxidermist, Burlington, Vt., in a letter dated Feb. 19, 1907, states that Goshawks have been quite abundant in his locality and that he had received fifteen or more specimens.

Messrs. Angell and Cash, taxidermists, Providence, R. I., have had a very extended experience this season with the Goshawk, and with their usual appreciation of the value of scientific records, have kept careful and accurate data of sixty-five specimens which passed through their hands between Oct. 27, 1906, and Feb. 12, 1907. All of these hawks were received from twenty-two towns within a radius of from three to thirty miles from Providence, R. I., ten from Connecticut, and sixteen from Massachusetts, mostly from localities not far from the Rhode Island border. The exact localities where seventeen of the specimens were taken is not known, but presumably from nearby points in Rhode Island. Mr. Cash writes me that this is the most remarkable flight of Goshawks in his section since 1870, the numbers exceeding those of that date. He also states that hunters have reported a great abundance of Ruffed Grouse, and as examination showed that a large percentage of these hawks had been feeding on this noble game bird, it would seem reasonable to believe that they were attracted by their favorite food.

Of the sixty-five specimens, thirty-five were males and twenty-five females. Sixty were in adult plumage and five in immature dress. The crops of many were filled to the utmost and some hunters who brought in specimens which they had shot, remarked that the hawks appeared inactive after their hearty meals.

A careful examination of the stomachs of forty-eight specimens showed the following results: twenty-eight contained the flesh and feathers of the Ruffed Grouse, in one instance a whole foot being found; five contained the flesh and feathers of the domestic

fowl, four contained partly digested flesh not identified, and the stomachs of eleven were entirely empty. One specimen, a female, killed at North Kingston, R. I., Nov. 12, 1906, when shot was standing on the body of a Ruffed Grouse which she had just killed.

Several instances have been reported showing the ferocity and daring which is so characteristic of this species. Mr. Cash writes that some farmers who had brought in specimens which they had killed, stated that when once a Goshawk succeeded in capturing a fowl from the barn yard he would be sure to return every day or two, so that they were reasonably sure of shooting him sooner or later. In a letter received from Mr. Manly Hardy, Brewer, Me., dated Feb. 18, 1907, in speaking of the abundance of this hawk he writes: "A few days ago a Goshawk came down among the houses near by and captured a tame dove. A week ago a man handed me a specimen which he had just shot in the act of killing a hen, he already having been successful in killing two Plymouth Rocks. In another yard near by a Goshawk had seized a hen, when a woman caught him in her hands, and although she was badly scratched she succeeded in killing him."

Rev. C. W. G. Eifrig, Ottawa, Ont., in writing on winter birds (*The Ottawa Naturalist*, Vol. XX, Feb. 15, 1906) states, in reference to the Goshawk: "On Oct. 18, a fine large female was shot by a farmer near East Templeton in the act of carrying away a good sized Plymouth Rock rooster. On November 3, a boy shot a nice male near the rifle range, which had just put himself on the outside of a Ruffed Grouse. Mr. E. G. White noticed a pair together near Pembroke, one also in the act of devouring a grouse."

Mr. H. K. Coale, Highland Park, Ill., informs me that in November, 1906, the coachman at a private residence of that town, caught an adult Goshawk in the barn yard, while in the act of carrying off a large hen he had just attacked. The hawk was kept alive and exhibited at the public school and afterwards liberated.

Mr. W. H. Brownson, of Portland, Me., informs me that while observing birds on Cape Elizabeth late in October, and while passing through a field adjacent to a farm-house, he found the skeleton of a domestic fowl. It was picked clean, nothing but the feathers of the head and wings remaining. Mr. Brownson called the attention of the farmer to it, who was, however, well aware how it hap-

pened, for he produced the hawk which he had shot and thrown on the woodpile. It was an adult Goshawk.

Mr. C. E. Dionne, of Laval University, Quebec, in a letter written March 6, 1907, states that the Goshawks have been abundant this winter in his locality. He had examined eight specimens of both sexes, all of which were in adult plumage.

Mr. Cash writes that a female killed at West Mansfield, Mass., Dec. 22, 1906, had descended into a poultry yard, fastened on to a large hen, and in attempting to escape with the prize, collided with a wire netting so forcibly that the scalp was torn away from the base of the bill to beyond the eyes. She was picked up stunned.

Mr. George R. White, Ottawa, Ont., writes under date of Feb. 25, 1907: "The Goshawk was very abundant last fall during the last of October and the beginning of November, large numbers being seen. At Kingston, Ont., regular flights were observed during the first week in November, while they were very common all the month of November."

Mr. J. H. Fleming, Toronto, Ont., writes under date of Feb. 20, 1907, that the Goshawks first reached his territory early in November, 1906, and were still scattered through the Province. He states that this flight was possibly not a quarter as large as that which occurred in 1896 and recorded by him (*Auk*, Vol. XXIV, p. 72), but has lasted longer. All specimens taken were adult birds, and the first arrivals were stuffed with flickers. Mr. Fleming also states that there have been no rabbits in the far north this winter, and the past season has been the worst known in Ontario for Ruffed Grouse.

Mr. Lou J. Eppinger, taxidermist, Detroit, Mich., writes under date of Jan. 31, 1907: "Goshawks are very plentiful and seem to be all over this part of the State. Most of them are in mature plumage, while the few which I received last year were all immature birds."

Mr. W. C. Kaempfer, taxidermist, Chicago, Ill., informs me that only a single specimen has been received by him from Illinois (Melrose Park, Nov. 30, 1906), a few others having been sent from Wisconsin and Michigan.

Mr. Henry W. Howling, taxidermist, Minneapolis, Minn., under date of Feb. 7, 1907, writes that he rarely receives more than

three or four Goshawks during the fall and winter, but this season fourteen specimens had already been sent in, all but one being in the adult plumage.

Mr. Alexander Calder, taxidermist, Winnipeg, Man., informs me in a letter dated Jan. 18, 1907, that ten Goshawks had been received, the first record being Sept. 8, 1906. The stomachs of those examined contained portions of rabbits and squirrels.

Mr. George E. Atkinson, taxidermist, Portage la Prairie, Man., writes under date of Feb. 11, 1907, that Goshawks had been more abundant this season in Manitoba than for the past nine years.

NOTES CONCERNING CERTAIN BIRDS OF LONG ISLAND, NEW YORK.

BY WILLIAM C. BRAISLIN, M. D.

THE species here referred to have recently been met with as birds of Long Island. Most are recorded because of their rarity. One, the Hermit Thrush, is herewith for the first time definitely announced as a breeding species on Long Island. The evidence is based on the capture of a single specimen of an immature bird just out of the nest, with but little power of flight, at Lake Ronkonkoma. Lake Ronkonkoma lies nearly at the geographical center of Long Island, several miles from the sea. The temperature there is, however, tempered by its influence, both in summer and winter, as the thermometer records, carefully made for a series of years by a medical friend who lives near there, show. The Hermit Thrush is said to breed regularly on Cape Cod. The present record brings its coastal nesting range somewhat further south. Further investigation will probably show that the Hermit Thrush is, though rare, a regular summer resident on Long Island.

Alle alle. LITTLE AUK OR DOVEKIE.—Another specimen (several have been previously recorded by me in 'The Auk') was recently sent from Montauk by Mr. Baker. It was secured on

Hither Plain Dec. 31, 1906. It was driven on the beach and there found by the patrolmen of the Life-saving Service. Mr. Baker wrote me that it came ashore during an unusually heavy southerly storm. It bore marks of having received serious injury in the surf. There were areas of extravasated blood beneath the skin of both the body and the head. Its stomach contained no food.

Nycticorax violaceus. YELLOW-CROWNED NIGHT HERON.—I have recently had the pleasure of examining a specimen of this species belonging to Dr. Henry Heath, a dentist, of this city. The specimen, which has been in his possession since the day it was shot, was taken at Orient. Some years ago while staying at the home of his brother, who lives at that place, the bird was killed by a gunner, who gave it to him in the flesh. The bird was taken, Dr. Heath believes, almost certainly in October, though he admits it may have been September or November, about fifteen years ago. This is the second absolutely authentic specimen taken on Long Island, one having been previously recorded (Chapman, *Visitor's Guide to the Local Collection of Birds in the Amer. Museum*, 1894, p. 28). About a year ago I was kindly informed by Mr. Roy Latham of Orient of his having recently met with the Yellow-crowned Night Heron at his home at Orient and since learning of Dr. Heath's specimen, as above recorded, I have written Mr. Latham for details, which he has given me, as follows: "The Yellow-crowned Night Heron was first seen on May 4, 1905, in a shallow pond on the Salt Marsh. It was very tame and allowed one to approach to within 50 feet while it was running nimbly, picking up minnows. As I walked nearer it flew to a stake 100 yards away. When I left, it returned and stayed in the pond throughout the day. The pond is a favorite feeding ground of the Black-crowned Night Herons and the Little Green Herons. The second (or the same Yellow-crowned Night Heron) was seen on May 7, 1905, in a sheltered creek near woods. It flew into a tree close by. I studied it well from all points. It was in full plumage. I have seen them in Florida and was surprised and delighted to find this one."

Accipiter atricapillus. AMERICAN GOSHAWK.—Although I have seen quite a number of specimens of this species from Long Island,

and have recorded one or more of these, recent occurrences are regarded as sufficiently interesting to record. Captain James G. Scott sent me an almost perfectly adult female specimen, which was killed at Montauk, November 14, 1906.

Acanthis linaria. LESSER REDPOLL.—Never having previously observed the Redpoll on Long Island, it was with pleasure that two were seen in Prospect Park, Brooklyn on March 5, 1907. The two, observed at close range, were even less timid than the common English Sparrow, as I came within little more than a yard's length of the nearest. They found something to pick at on the snow mounds at the edge of the walk, and as they flew I was interested to note the similarity of flight and call-notes to those of the Goldfinch, for which I might easily have mistaken them under less favorable conditions for observation.

Hylocichla aonalaschkæ pallasii. HERMIT THRUSH.—Mr. Wm. Dutcher has related in 'The Auk' (III, 1886, p. 443) the evidence obtained favoring the probable occurrence of this thrush as a summer resident on Long Island, but as no further data appeared in relation to the matter the possibility of its being a breeding species remained problematical. In reply to an inquiry, Mr. Arthur H. Howell kindly wrote me that he has twice heard the notes of what he regarded without doubt as the Hermit Thrush in summer on Long Island, during the time of his collecting here. He had once heard it at Lake Ronkonkoma north of the lake, and again near Coram on the old bicycle path which crosses the center of the island, connecting Port Jefferson and Patchogue. On both occasions the song was heard in the low range of hills running the length of Long Island. To obtain if possible further information regarding the species as a summer resident, Mr. George K. Cherrie and I journeyed to Lake Ronkonkoma on June 9, 1906, whence on foot we covered as much of the ground in the east and north as we were able on that day. The list of species which we made proved most interesting to us. The object of our search was not met with until almost at the end of our stay, when a single immature Hermit Thrush was shot. This was the only thrush of any species and the only individual of this species seen on that date. It was found in a wood of mostly deciduous timber. In the tracts where the pines predominated Prairie Warblers, Mourning

Doves, Blue Jays, and Chewinks were abundant. Twenty-five species of birds were observed. Neither the Wood Thrush nor Wilson's Thrush was seen.

The young bird taken was probably not twenty-four hours out of the nest, in fact it corresponded in every particular with young Hermit Thrushes taken from the nest by Mr. Cherric in Vermont the preceding season.

Obtaining this young bird, practically a nestling, unable to fly any considerable distance, was satisfactory evidence to us that the Hermit Thrush is a nesting species on Long Island. Our not meeting with adult birds would seem to indicate that on Long Island the Hermit Thrush is equally as shy as elsewhere, and perhaps to an even greater degree. We likewise decided, largely from the same reason — that of our not meeting an adult specimen — that it is but a *rare* summer resident. In this we may be in error. The nature of the ground they occupy here may give the birds need for special caution in exposing themselves, while it is possible that they may occur more commonly in other parts of the island than in the region visited.

SOME CHANGES IN THE CURRENT GENERIC NAMES OF NORTH AMERICAN BIRDS.

BY WITMER STONE.

THE proposed publication of a new edition of the A. O. U. Check-List of North American Birds necessitates a careful review of the nomenclature of our birds, and in order that the names may stand on as firm a basis as possible, the more exhaustive the present investigation may be, the better.

As an effort in this direction I have, during the past year, examined the original publication of practically all the genera of the Check-List; as well as the genera of the birds of the world up to 1830. Dr. C. W. Richmond who, as is well known, has been

verifying bird names and dates of publication for many years, and whose knowledge of the literature is unrivalled, has cordially aided me in every way possible and to him I would express my deep obligations.

My investigations show that the strict enforcement of the Code, especially several recent amendments and alterations, will necessitate a number of changes in generic names, while at the same time it places the genera on a more substantial basis than before. As a matter of future record I present below a list of apparently necessary changes, and discussions of other cases which are at least open to question. Some of these cases have already been published, others are contributed by Dr. Richmond, and the rest have originated in my investigations.

I. OVERLOOKED NAMES OR EARLIER CITATIONS OF CURRENT NAMES.

PODICEPS Lath. 1787 (not 1790), becomes *TACHYBAPTUS* Reich. 1849.—This name first appeared in Latham's Synopsis of Birds, Suppl., I, p. 294, the type (first species) being *Colymbus cristatus* Linn. It thus becomes a pure synonym of *Colymbus* of the Check-List and a new name must be employed for the subgenus embracing *P. dominicus* and its allies. This is found in *Tachybaptus* Reichenbach, Av. Syst. Nat., pl. ii, 1849, based on the Little Grebe, *Colymbus ruficollis* Pallas.

SIMORHYNCHUS Merr. 1819, becomes *ÆTHIA* Dumont, 1816.—*Æthia* Dumont, Dict. Sci. Nat., rev. ed., I, suppl. p. 71 (1816), based exclusively upon *A. cristatellus* (*Alca cristatella* Pallas), has clear priority over *Simorhynchus* Merrem based upon the same species.

AYTHYA Boie, 1822, becomes *NYROCA* Fleming, 1822.—Another spelling of the preceding name, viz. *Aethya*, which is given by Dumont on the same page, seems to invalidate Boie's *Aythya* for a group of ducks. The next available name for the latter is *Nyroca* Fleming, Philos. of Zool., II, p. 260, type by tautonymy *Marila nyroca*. There has always been a question of priority between these two names, so that it is satisfactory to have one of them invalidated. The enforcement of the rule of relative page precedence, moreover, leads to the same result.

FULIGULA Steph. 1824, becomes MARILA Oken, 1817.—Oken in *Isis* for 1817, p. 1183, as already pointed out by Dr. Gill,¹ gave names to many generic groups of Cuvier's *Règne Animal*, for which that author had merely used vernaculars. Among them, on p. 1183, is *Marila* for Cuvier's group "Les Millouins," the type of which is *Anas marila* Linn. by tautonomy. This will therefore replace subgenus *Fuligula* of the Check-List, and inasmuch as it is earlier than *Nyroca*, the other subgenus, it will have to be used as the generic name for this group. So in place of *Aythya* with subgenera *Aythya* and *Fuligula* we shall have *Marila* with subgenera *Nyroca* and *Marila*.

CAMPTOLAIMUS Gray, 1841, becomes KAMPTORHYNCHUS Eyton, 1838.—Gray in his *List of the Genera of Birds* 1841, p. 95, proposes *Camptolaimus* in place of *Kamptorhynchus* Eyton, without comment. Baird quotes the latter as a synonym in *Birds of North America*, adding "not of Cuvier" but as neither Dr. Richmond nor I have been able to find any use of this name by Cuvier it would seem that Eyton's name (*Monog. Anat.*, p. 57) must be restored.

CLANGULA Leach, 1819, and HARELDA Stephens, 1824.—It has been recognized that the substitution of *Clangula* Leach for *Glaucionetta* Stejneger and the revival of *Harelda* Steph. for the Oldsquaw, as published in the eighth Supplement to the Check-List, was a mistake since Leach in 1819 (*Ross, Voyage*, App. p. xlviii) based his genus *Clangula* solely upon the Oldsquaw. In Oken's review of Cuvier already mentioned, however, we find on page 1183 the genus *Clangula* established in 1817 on *Anas clangula* Linn., so that in light of this earlier action the names will remain as at present.

QUERQUEDULA Steph. 1824, becomes QUERQUEDULA S. G. Gmelin, 1770.—Originally used in *Reise Russ.*, p. 70; type, by tautonomy, *Q. prima* (*Anas querquedula* L.).

GALLINAGO Leach, 1816, becomes GALLINAGO Koch, 1816.—Koch, *Syst. Baier. Zool.*, I, p. 312; type by tautonomy *G. media* (*Scolopax gallinago* Linn.).

Leach's name is a *nomen nudum* but is in any case antedated by Koch.

¹ *Proc. U. S. Nat. Mus.*, XXVI, p. 965.

COLUMBIGALLINA Boie, 1826, becomes CHÆMEPELIA Sw.—The name *Columbigallina*, usually cited from Boie, was first used by Oken (1817) in the Cuvier review already referred to, and was based upon "La Colombi Gallin" of Levaillant, which is *Columba carunculata* Temm. and Knip, an unidentifiable bird. This name disposed of, we fall back upon *Chæmepelia* Sw., Zool. Jour., III, p. 361, 1827, for the Ground Dove, the type (first species) being *Columba passerina* Linn.

ARDETTA Gray, 1842, becomes IXOBRYCHUS Billberg, 1828.—Billberg, Synop. Faun. Scand., Aves, p. 166, proposed *Ixobrychus* for *Ardea minuta* and *A. stellaris* of Linnæus, the former being the type by the first species rule the name will replace *Ardetta* Gray, 1842, of the Check-List.

IACHE Elliot, 1879, becomes CYNANTHUS Sw. 1827.—*Cynanthus* first appeared in the Philos. Magazine, I, p. 441, 1827, not Zool. Jour., III, p. 357, whence it is usually quoted (*cf.* Oberholser under *Ammodramus* below). The type (first species) is *C. latirostris* Sw. and the name will replace *Iache* Elliot, 1879, of the Check-List which is based upon the same species.

MEGASCOPS Kaup, 1848, becomes OTUS Pennant, 1769.—*Cf.* Stone, Auk, 1903, p. 275.

GLAUCIDIUM Boie, 1826, becomes NOCTUA S. G. Gmelin, 1771.—*Noctua* was first used in a generic sense by S. G. Gmelin, Nov. Com. Sci. Petr., XV, p. 447 (1771), the only species mentioned being "*Noctua minor* Briss." He states that his bird is rather smaller than that described by Brisson, and from the locality it is clear that it was the *Strix passerinum* of Linnæus. It may be claimed that Brisson's name was based upon the little owl of southern Europe, *Athena noctua* (Scopoli), but while he no doubt confused the two species, as did Linnæus, the majority of references are identical in the two cases and both names have been restricted to the northern species so far as their application is concerned.

As *Glaucidium* Boie, Isis, 1826, p. 970 is based upon *Strix passerinum* it is obvious that it must become a synonym of the earlier *Noctua* S. G. Gmelin.

TROGON Linn. 1766, becomes TROGON Brisson, 1760.—Type remains the same.

CONTOPUS Cab. 1855, becomes HORIZOPUS Oberh. 1899.—*Cf.* Oberholser, Auk, 1899, p. 331.

COTURNICULUS Bp. 1838, becomes AMMODRAMUS Sw. 1827.—
Cf. Oberholser Smithson. Misc. Coll., Quart. Issue, III, pt. 1, p.
67.

AMMODRAMUS Sw. 1827, becomes PASSERHERBULUS Mayn. 1895.
—In the paper above quoted Mr. Oberholser, finding no name
available for the group formerly known as *Ammodramus*, proposed
the excellent name *Ammospiza*. Dr. Richmond, however, finds
the name *Passerherbulus* proposed for *Ammodramus lecontei*, a
member of this genus, by C. J. Maynard, *Birds of Eastern N. A.*,
2d ed., pt. 40, 1895, p. 707, and on grounds of priority it must be
adopted.

PIPILO Vieill. vs. HORTULANUS Vieill.—In the introduction to
his *Oiseaux Amér. Sept.*, Vieillot used the name *Hortulanus* for
three birds, as follows: *H. erythrophthalmus*, *H. albicollis* (*Fringilla albicollis* L. Gm.), *H. nigricollis* (*Fringilla flavicollis* and
Emberiza americana Gm.), and gave figures of the bills. The
last two species are easily identified by the synonyms in brackets
but there is no positive clue to the first one, except through the
figure. There being no indication of a type for *Hortulanus* the
first species is to be selected as such, and the acceptance of the
name in place of *Pipilo* will thus depend upon whether or not
we consider it recognizable.

HELMINTHOPHILA Ridgw., 1882, becomes VERMIVORA Sw. 1827.
—Cf. Oberholser, Smithson. Misc. Coll., Quart. Issue, III, pt. 1,
p. 66.

GALEOSCOPTES Cab. 1850, becomes DUMETELLA S. D. W. 1837.
—Dr. Richmond finds in the *Analyst*, V, No. XVIII, Jan. 1837,
p. 206, a paper by "S. D. W." in which occurs the generic name
Dumetella based upon *D. felivox* or "Cat Thrush of Latham."
Latham really called the Catbird "Cat Flycatcher," but Wilson
used "Cat Thrush" (*Amer. Ornith.*, II, p. 90) and so did Stephens
(*Gen. Zool.*, X, i, 1817, p. 272). The latter also uses the name
Turdus felivox. Altogether the name is so obviously based upon
the Catbird that it should be adopted in place of the later *Galeo-*
scoptes which is also antedated by *Spodesilaura* Reichenbach, 1850,
Av. Syst. Nat., pl. liii.

CYANECULA Brehm, 1828, becomes CYANOSYLVA Brehm, 1828.
—Dr. Richmond calls my attention to this earlier name for *Mota-*
cilla suecica L., proposed by Brehm, *Isis*, 1828, p. 920.

MERULA Leach, 1816, becomes PLANESTICUS Bp. 1854.—*Merula* Leach, 1816, is a nomen nudum but in any case is antedated by *Merula* Koch, 1816 (Syst. Baier. Zool., p. 242), based upon *Sturnus roseus* L.; Koch's work, as I am told by Dr. Richmond, appearing earlier in the year.

The name *Merula* being thus doubly invalidated we must adopt for the Robin and its allies *Planesticus* Bp., Compt. Rend., XXXVIII, p. 3, 1854; type (first species) *Turdus lereboulleti* Bp. = *Turdus jamaicensis* Gm. There is an earlier name, *Hodoiporus*, proposed by Reichenbach in 1850, Av. Syst. Nat., pl. liii, based on a figure of head, feet, wing, etc., but there is no specific name and the specific identification of the bird is in doubt. It is, however, certainly one of the group formerly called "*Merula*" so that the name may be considered available by some.

OLBIORCHILUS Oberh. 1902, becomes NANNUS Billberg, 1828.—Billberg's genus *Nannus* Synop. Faun. Scand., p. 57, is a substitute for *Troglodytes* Cuvier, 1817, Règn. Anim., I, p. 370, the type of which is *Motacilla troglodytes* Linn., and thus has many years priority over *Olbiorchilus*.

II. EQUIVALENT GENERA.

DYSPORUS Illiger, 1811, becomes MORUS Vieill. 1816.—In the introduction to Illiger's Prodrömus he mentions a number of generic names which for one reason or another he declines to accept and for which he proposes substitutes in the body of the work. One of these is *Sula* Briss., for which he proposes *Dysporus*. The two names being synonymous we must seek another subgeneric name for the Gannet, which is found in *Morus* Vieillot, 1816, Analyse, p. 63, based entirely upon *Pelecanus bassanus* Linn.

MERGANSER Brisson, 1760, becomes SERRATOR 'Sprungli' Storr, 1784.—Brisson's *Merganser* and Linnæus's *Mergus* seem to be based upon exactly the same birds and are therefore synonymous. *Serrator* Sprungli, in Storr's Alpenreise, I, p. 74 (1784), seems to be the next name for the Mergansers of authors; type by tautonomy *Mergus serrator* L.

III. NOMINA NUDA OR NAMES NOT PROPOSED IN A GENERIC SENSE.

FREGATA Briss. 1760, becomes FREGATA Lacép. 1799.—Brisson did not use the name in a generic sense.

NYCTICORAX Raf. 1816, becomes NYCTICORAX Forster, 1817.—Rafinesque's name is a nomen nudum. Type (only species), *Ardea nycticorax* L.

BOTAURUS Herm. 1783, becomes BOTAURUS Stephens, 1819.—Hermann did not use the name in a generic sense. This was first done by Stephens, Gen. Zool., vol. XI, p. 592. Type from Forster (first species), *Ardea stellaris* L.

MACRORHAMPHUS Leach, 1816, becomes MACRORHAMPHUS Forster, 1817.—All the new genera in Leach's Catalogue are nomina nuda, but all can be cited from Forster's Catalogue of the next year, where Linnæan equivalents are given, unless some other work intervenes.

PAVONCELLA Leach, 1816, becomes MACHETES Cuvier, 1817, (*Règne Animal*, I, p. 490).—Cuvier's *Règne Animal* was prior to Forster's Catalogue. Type the same.

CALIDRIS Cuvier, 1800, becomes CALIDRIS Ill ger, 1811.—Most of the new generic names of the Tableau in *Leçons Anat. Comp.* are nomina nuda, as they are accompanied only by a vernacular. Where, however, the vernacular was used in the Tableau *Elément.*, 1798, in conjunction with an identifiable binomial name, Dr. J. A. Allen suggests that it should be accepted; the species mentioned becoming the type. Thus while *Calidris* is a nomen nudum, *Regulus* is tenable since it is called "Roitolet" in 1800, and in the Tableau *Elément.*, 1798, we find "Roitolet, *Motacilla regulus* L.," showing exactly what the genus was based upon.

In the same way, while most of Brehm's genera, in his paper in *Isis*, 1828, are nomina nuda, we can retain "*Archibuteo*, Rauchfuss-buzzard," since it is clearly identified in his earlier *Beiträge Vogelkunde*, 1820 — viz., "Der Rauchfussige Buzzard, *Falco lagopus* L."

URUBITINGA Lesson, 1839, becomes URUBITINGA Lafr. 1843.—This name occurs only as a nomen nudum in *Rev. Zool.*, 1839, p. 132. Dr. Richmond gives me as the earliest citation known to

him Dict. Univ. Hist. Nat., II, 1843, p. 786, type "L' Aigle — Autour Urubitinga de Cuvier."

ANTROSTOMUS Gould, 1838, becomes ANTROSTOMUS Bonap. 1838.—The Gould reference is entirely erroneous. Dr. Richmond gives me Bonaparte, Geog. & Comp. List, 1838, p. 8, as the earliest citation, type (first species) *Caprimulgus carolinensis* Gm.

SAYORNIS Bonap. 1854, becomes SAYORNIS "Bp." Gray, 1855.—In Bonaparte's paper, Compte Rendus, XXXVIII, 1854, p. 657, this genus is introduced thus: "*Sayornis nigricans* Bp.," with no description and nothing to indicate what the "*nigricans*" is intended to refer to. It is a nomen nudum and must date from Gray, Cat. Gen. and Subgen. of Birds, 1855, p. 146, where *Tyrannula saya* Bp. is given as the type.

IV. CHANGES DUE TO THE RULE OF TAUTONOMY.

The enforcement of this rule, *i. e.*, "If the name of a genus is the same as the name or synonym of one of its included species, that species shall be the type," fixes absolutely the types of many genera upon species now recognized as such but entails a few changes where other species have been currently selected as types.

PHALAROPUS Briss. 1760, becomes LOBIPES Cuv. 1817.

CRYMOPHILUS Vieill. 1816, becomes PHALAROPUS Briss. 1760.

Tautonomy fixes the types of nearly all the Brissonian genera, as this author was accustomed to call one of his species by the same name that he applied to the genus. In only one instance has this action been ignored in selecting the types of his genera, namely in the case of *Phalaropus*, the usually accepted type of which is *Tringa lobata* L., while the species called *Phalaropus* by Brisson is *Tringa fulicaria* L. By accepting the latter as the type we shift *Phalaropus* to the "Red Phalarope" which thus replaces *Crymophilus* Vieill. For *Phalaropus* of the Check-List we must revive *Lobipes* Cuv. 1817, Règne Anim., I, p. 495, based solely upon *Tringa lobata* L.

CÆLIGENA Less. 1832, becomes CYANOLÆMUS nom. nov.—The species upon which *Cæligena* was originally based (Ind. & Synop. gén. Troch., 1832, p. XVIII), included *Ornismyia cæligena* Lesson, which by tautonomy is the type. Unfortunately *Lampropygia*

Reich. has been used for this bird and its allies and *Cæligena* for *O. clemenciæ*. Replacing Reichenbach's name with *Cæligena*, we leave *O. clemenciæ* without a generic appellation and I propose *Cyanolæmus*,¹ type *Ornismyia clemenciæ* Lesson.

V. ERROR IN SELECTING THE TYPE.

CEOPHLEUS Cab. 1862, becomes PHLEOTOMUS Cab. & Heine, 1863.—The Check-List cites *Picus pileatus* L. as the type of *Ceophleus* Cab. but in the original publication, J. f. O., 1862, p. 176, *Picus lineatus* L. is explicitly given as the type. Therefore if we regard these two species as generically distinct, we must adopt a new name for *Picus pileatus* L. Hargitt, in the British Museum Catalogue, Vol. XVIII, adopts *Dryotomus* from Swainson, Class. Birds, II, p. 308, but, as Dr. J. A. Allen has pointed out to me, this name first appeared in the Fauna Bor. Amer., II, p. 301, where *Picus martius* L. is given as the type, so that it becomes a synonym of *Picus* L. *Phleotomus* Cab. & Heine, Mus. Hein., IV, p. 102, 1863, based exclusively upon *Picus pileatus* L., is, however, available.

VI. CHANGES DUE TO THE FIRST SPECIES RULE.

In order to definitely fix the types of various composite genera of older authors, the revised Code of Nomenclature of the A. O. U., which has been adopted but not yet published, provides that where no type is indicated in the original publication and where none is implied by the rule of tautonomy, the first species mentioned by the original author shall be taken as the type, except in the case of Linnæan genera where the commonly accepted species shall remain the type. After the changes above indicated have been made we find that there are in the Check-List 121 composite genera with no indication of type species. In 93 of these the commonly accepted type is the first species, and of the others 16 are Linnæan genera. Selecting the first species in each of the remaining twelve genera as the type we shall have to make the following changes.

CYCLORRHYNCHUS Kaup, 1829, becomes PHALERIS Temm. 1820.

PHALERIS Temm. 1820, becomes ALCELLA nom. nov.

¹ κυανεός blue, λαιμός throat.

The first species mentioned in the description of *Phaleris* Temm., Man. Ornith., 1820, p. cxii, is *Alca psittacula* Pallas, and this name replaces the later *Cyclorhynchus* based upon the same species.

Subgenus *Phaleris* of the Check-List may be replaced by **Alcella**,¹ type *Alca pygmæa* Gm.

MELANITTA Boie, 1822, becomes PHÆONETTA nom. nov.—The first species under *Melanitta* Boie, Isis, 1822, p. 564, in the original diagnosis is *Anas nigra* L. so that this genus becomes a synonym of *Oidemia* which has the same type. For *Melanitta* of the Check-List I propose **Phæonetta**² type *Anas fusca* L.

ACTITIS Ill. 1811, becomes TRINGOIDES Bp. 1831.—The first species in the original diagnosis of *Actitis* (Ill., Prodrumus, 1811, p. 262) is *Scolopax limosa* Linn. so that it becomes a synonym of *Limosa* and we revive *Tringoides* Bp., Saggio, p. 58 (1831), for the Spotted Sandpiper.

TYMPANUCHUS Glog. 1842, becomes BONASA Steph. 1819.—BONASA Steph. 1819, becomes HYLOBRONTES nom. nov.

Bonasa was originally based upon the "Heath-hens," *Tetrao cupido* and *T. umbellus*, Stephens, Gen. Zool., XI (1819), p. 298, and the Prairie Chicken being the first species must be taken as the type. This name having priority will replace *Tympanuchus*, while for *Bonasa* of the Check-List I propose **Hylobrontes**,³ type *Tetrao umbellus* L.

CATHARTES Ill. 1811, becomes RHINOGRYPHUS Ridgw. 1874.—GYPAGUS Vieill. 1816, becomes CATHARTES Ill. 1811.

The first species mentioned in the original description of *Cathartes* Ill. (Prodrumus, 1811, p. 236), is the King Vulture, *V. papa* L., for which the name must be used in place of the later *Gypagus*, while for the Turkey Vulture *Rhinogryphus* Ridgway will be revived.

CONURUS Kuhl, 1820, becomes CONUROPSIS Salvadori, 1891.—The type of *Conurus* by the first species rule is *C. guianensis*, not *C. carolinensis* L. Therefore if we regard the Carolina Parakeet as generically different from the other species of *Conurus*, as

¹ *Alca*, Auk; -ella diminutive.

² φαίος brown, νηττα a duck.

³ ὕλη wood woodland, βροντης, a thunderer.

is done by Salvadori in the British Museum Catalogue, XX, p. 203, we must adopt *Conuropsis*, the name he proposed for it.

CYANOSPIZA Bd. 1858, becomes PASSERINA Vieill. 1816.—PASSERINA Vieill. 1816, becomes PLECTROPHENAX Stejn. 1882.

The type of *Passerina* Vieill., Analyse, 1816, p. 30, by the first species rule is the Indigo Bird, *Tanagra cyanea* L., and using the name in this sense, as was done in the original Check-List, we must also revert to *Plectrophenax* Stejn. (Proc. U. S. Nat. Mus., V, p. 33) for the Snow-flake.

ACANTHIS Bechst. 1802 (not 1803), becomes LINARIA Bechst., 1802.—The type of *Acanthis* Borkhausen, Deutschl. Fauna, I, p. 248, 1797, where the name first appeared, is, by the first species rule, the European Goldfinch, *Fringilla carduelis* L.; so that this name becomes a synonym of *Carduelis*. For the Redpolls we must adopt *Linaria* Bechstein, 1802, Ornith. Taschenb., type (first species) *Fringilla cannabina* Linn. which is generally regarded as congeneric with *F. linaria*.

The types of several other genera change by this rule but fall upon congeneric species.

The type of ANTHUS is *A. arboreus* Bechst. (*Alauda trivialis* L.).

The type of CARPODACUS is *Pyrhula rosea* [= *Fringilla rosea* Pallas].

The type of AIX is *Anas galericulata* L.

A reservation of the new code exempts Linnæan genera from the operation of the first species rule, their types being as indicated by Linnæus himself, the best known species. There is general consensus of opinion on all but two of these genera, namely *Tetrao* and *Colymbus*. The type of the former is *T. tetrix* by tautonomy.

With regard to *Colymbus*, Americans take *C. cristatus* as the type and use the term for the Grebes, British and most European authors take *C. arcticus* and fix the name on the Loons. Both species are common Scandinavian birds so that there is no indication of a type by following Linnæus's instructions. Other methods failing we must accept the first species, *C. arcticus*, as the type and use *Colymbus* for the Loons, reviving *Podiceps* Latham, 1797 (*cf. antea*) for the Grebes.

A CARD SYSTEM OF NOTE-KEEPING.

BY A. H. FELGER.

SEVERAL years ago I presented to the readers of 'The Auk' (Vol. XIX, 1902, pp. 189-195, 314) a plan for recording in a condensed form the life history notes of birds. This system provided for the keeping of notes on sheets of paper ruled and cross-ruled in suitable manner, a method of note-keeping that had previously found favor with many ornithologists because thereby one could see at a glance the different species observed during each day as well as the different days that each species was observed. In presenting the above mentioned plan it was my purpose to enlarge upon the system then in general use and present to field ornithologists a system by which not only the number of birds of each species observed each day might be seen at a glance, but also environments, conditions of plumage, stages of moult, indications of mating, indications of nest-building, etc.

Since publishing the above named article I have, for my own use, transformed this sheet system into a card system, which I now desire to place before the readers of 'The Auk' in the hope that by my labors some one besides myself may be benefited.

In this system I use three distinct types of cards, each 3 in. \times 5 in. and of 'medium weight,' which, for convenience of reference here, I shall designate 'condition card' (Fig. 1, card 1), 'barred card' (Fig. 2, card 1), and 'extension card' (Fig. 1, card 2; Fig. 2, card 2). The cards for these plates were not selected with reference to contemporaneity, which I hope will not confuse, but selected with a view to illustrating to better advantage the plan of amplifying notes on the 'extension cards.'

The content and method of arrangement of the subject matter to be placed on the 'condition cards' and 'barred cards' is practically the same as that of the 'headline spaces' and 'sections' respectively of my original system.

The abbreviations used on these cards are defined as follows:—

Loc. = locality.
Plum. = plumage.

- I. M. = number of indications of mating.
I. N-b. = " " indications of nest-building.
N. E. = " " nests with eggs.
N. N. = " " nests with nestlings.
No. Sn. = " seen (not including "No. F." and "Y. W.").
No. Hd. = " heard.
No. F. = " in flocks.
No. M. = " migrating.
Y. W. = " of young on the wing.
No. T. = " taken.

A period placed in front of any number = "about."

For each day's work afield I fill out one of these 'condition cards,' one, in the majority of cases, giving sufficient space to record all notes of the nature indicated on the card that are desired. In case there is not sufficient space on this card to record all desirable data with respect to 'Floral' and 'Faunal Changes,' these notes are continued by the use of index letters onto an 'extension card' as indicated in Fig. 1, cards 1 and 2. The 'Locality' on this 'condition card' is for the general locality over which I have that day worked in distinction from the 'Exact Loc.' in which any species may be found and recorded on the 'barred cards.'

These 'condition cards' are not essential to the system and may be omitted at one's pleasure. Isolated notes taken when going to and from business, or under other adverse circumstances, cannot always be accompanied by notes of contemporaneous conditions, but it is evident that, when the opportunity is given to make such observations, notes on the new insects and other small animals that are about, the new buds and flowers that are out, etc., should be recorded as a most valuable contribution to the study of bird migrations.

The 'barred cards' will also in the majority of cases be found to contain sufficient space to accommodate the notes that should be placed upon them. The spaces within the barred lines are intended for numbers only. If one wishes to enter into descriptions of 'Indications of Mating,' of 'Nest-building,' etc., or to extend any note on the card not within the barred lines, it may easily be done by the use of as many 'extension cards' as are desirable, each being numbered consecutively. See Fig. 2, cards 1 and 2.

In recording notes of certain character, as will appear without explanation to one using this system, it is sometimes of advantage to use only the 'extension card' for the purpose, and not the 'barred card.' For example, if one should write a description

APR 19 1906		1
LOCALITY	<i>Bowles' Lake, Littleton, Colo.</i>	
FLORAL CHANGES	<i>Silacs are leafing out, cottonwood</i> A	
FAUNAL CHANGES	<i>1 Sand Swift, many Tiger Beetles,</i> B	
WEATHER	<i>Clear and warm.</i>	
TEMPERATURE	<i>Min. 52°, Max. 74°.</i>	
WIND	<i>Mere trace from N.W.</i>	
PRECIPITATION	<i>None.</i>	
TIME OUT	<i>9:15 - 6:30</i>	
METHOD OF TRAVEL	<i>Train to Littleton, then afoot.</i>	
SPECIALTY	<i>Note taking.</i>	

APR 19 1906		2
A	<i>buds are bursting, soft maples have cast their scale leaves.</i>	
B	<i>many Carrion Beetles, many Millers, 1 Hornet, many ♂ Mosquitoes, and but 8 Grasshoppers were seen. Field Mice and Gophers show renewed activity. Frogs, first seen Mar. 27th. are now abundant and noisy.</i>	

FIG. 1, CARDS 1 AND 2.

of a bird in abnormal plumage seen in some museum, such description would be placed on 'extension cards' only.

There are other cases of what I call 'compound notes' that occasionally make their appearance in the work of every ornitholo-

gist. A note on a hybrid or a note on the killing of one bird by another would fall under this head. In such a case the names of both birds should be placed at the head of the 'extension card' and the card should be filed under the name of the bird considered of the greater importance in this case. Under the name of the

JUL 5 1906		<i>Xanthocephalus xanthocephalus</i>		1
EXACT LOC. <i>Sloan's Lake, Denver, Colo.</i>				
ENVIRONMENT <i>In cattails and alfalfa fields.</i>				
PLUM., MOULT <i>Mang with some wing and tail feather out. A</i>				
I. M.	N. E. $\frac{2}{4}, \frac{1}{3}$	NO. SN. <i>.300</i>	NO. F. <i>(Juv. ad.)</i>	Y. W. <i>.500 C</i>
I. N-B.	N. N. <i>9 B</i>	NO. H-B.	NO. M. <i>(Mang juv.)</i>	NO. T. <i>1 juv.</i>
SONGS, CALLS <i>Several full songs, many decultory and choppy, vast majority not singing, only "clucking".</i>				
FOOD <i>Hundrede feeding in alfalfa field, probably on grasshoppers.</i>				

JUL 5 1906	<i>Xanthocephalus xanthocephalus</i>	2
A <i>One with whole tail gone.</i>		
B <i>9 ♀'s carrying food (apparently grasshoppers) to young.</i>		
C <i>Mang still in pairs and severals. Hundrede of young on wing in flocks and usually a few adults in each flock. One flock contained .200 juv. and .6 ad ♂'s and ♀'s. These adults may have belonged to some of the juv. or may have been non-mated.</i>		

FIG. 2, CARDS 1 AND 2.

bird of the lesser importance should be placed a card referring to this note and indicating where it is filed.

The cards are ruled and printed on one side only, the notes being confined wholly to this one side. Any drawings made to

accompany the notes may be placed on the blank sides of the cards, and the same filed with the note cards.

The cards may be arranged in one's file as a whole in chronological order with a 'condition card' leading each day's notes, or, as I myself keep them, the 'barred cards' together with their 'extension cards' may be arranged chronologically according to each species, the 'condition cards' being kept chronologically in a separate file. My own cards are arranged by genera, and within each genus its species, following the same order of sequence as that adopted by the A. O. U. To indicate the positions of genera I use colored ' $\frac{1}{3}$ guide cards' containing the generic names. To indicate the positions of species within each genus I use differently colored ' $\frac{1}{3}$ guide cards' containing the specific names. To indicate the positions of the subspecies I use cards of still different color.

The following cardinal advantages offered by this system may have already occurred to the reader: (1) By the use of these printed forms no note indicated thereon that should be recorded is ever forgotten, as is lamentably the case when the diary system is employed. (2) The system is self indexing. In running over a hundred cards on a certain species that one is studying it is a very simple matter by reference to the 'barred cards' to select those that contain notes on 'mating,' 'nest-building,' or the like. (3) If the cards on any given species are arranged chronologically in a horizontal row, one will have in line before him for very easy study all the notes with reference to any desired phase of the bird's life history that he has ever taken; and this without cataloguing or indexing.

I am convinced that a card system is the only system by which full notes should be kept, and no one, I think, who has had the harrowing experience of indexing and constantly using the diary system will take exception to this statement. The system that I here submit I have given a year's critical trial and am now prepared to recommend it without hesitation to all field workers who endeavor to record copious notes by following a plan that is systematic, readily understood, and easy of reference.

These cards can be made by any printing establishment provided with a ruling machine at a cost considerably below that of

the ordinary 'stock cards' furnished by firms for card catalogue purposes. In large quantities they should be obtained in this way ruled, cut, and printed, for \$1.35-\$1.50 per M.

It is often desirable to have a bird's-eye view of the numbers of birds of each species observed each day in order to study relative dates of arrival and departure, relative abundance, etc. For this purpose I keep on a simple system of quadrille rulings the numbers of the birds of each species seen or heard each day and nothing more, these same numbers appearing on the cards in amplified form in case such species have also been given card records. It frequently happens that enough data are not collected on a given species to entitle it to a card record. To illustrate, if a Hawk were seen flying overhead too far away to determine condition of plumage, stage of moult, etc., and admitting of no note other than a mere record of its occurrence, this record would be placed on the quadrille ruled sheet, and not entered upon a card. I may, at some future date, explain to the readers of 'The Auk' my method of keeping these quadrille ruled sheets.

NOTES ON THE BLACK RAIL OF CALIFORNIA.

BY WILLIAM BREWSTER.

UNDER the name *Porzana Jamaicensis*, var. *coturniculus* Baird¹ Mr. Ridgway, in 1874, described² a Rail said to have been obtained on the Farallones off the coast of California and to differ "from var. *Jamaicensis* of southeastern United States, West Indies and South America, in smaller size, and more uniform colors," the back

¹The name and its authority were thus written originally by Mr. Ridgway. They have since appeared in print in various forms, as *Porzana jamaicensis coturniculus* Baird (Ridgway, Proc. U. S. Nat. Mus., III, 1880, 202, 222), *Porzana jamaicensis*, var. *coturniculus*, "Baird MS." (Baird, Brewer, and Ridgway, Water Birds of North America, I, 1884, 378), *P. jamaicensis coturniculus* Baird (Ridgway, Manual of North American Birds, 1st ed., 1887, 140), *P. coturniculus* Baird (*Ibid.*, 2d ed., 1896, 140), and *Porzana coturniculus* (Ridgw.), (A. O. U Check-List, 2d ed., 1895, 80).

²American Naturalist, VIII, 1874, 111.

being "without white specks." As no additional specimens at all closely resembling the type have since been reported and as the surf-swept Farallones possess no marshes and are otherwise wholly unsuited for the abiding place of any species of Rail, it has come to be questioned if Mr. Ridgway's bird was really taken there — or indeed anywhere in North America. Until very recently Little Black Rails from whatever locality have been so very rare in collections that it has been impossible to bring together a sufficient number of them to show the general range of individual, seasonal and geographical variation to which the species is subject. For this reason the status as well as the habitat of the form *coturniculus* has remained involved in much doubt.

Within the past few years, however, Black Rails which thus far have been called *jamaicensis* have been found abundantly in a few localities on or near the coast of California whence I have received no less than twenty-six of their skins, of which twenty-two were collected by Mr. C. A. Allen at Point Reyes. On comparing these specimens with a somewhat smaller number taken east of the Rocky Mountains I have become convinced that the Black Rail of California is at least subspecifically distinct from that of the eastern United States. The latter has always been regarded as true *jamaicensis*, a ruling which I have no present disposition to challenge, for the only specimen that I have seen from the type locality of the species, Jamaica, appears to differ from the bird of the Atlantic coast region of North America only in having decidedly shorter wings, while it is probable that these were much longer originally, for the tips of the primaries are ragged and apparently rather badly worn.

The type of *coturniculus* has been considered remarkable for its diminutive size, for the extreme attenuation of its bill and for the sparseness—or rather restriction—of the white spotting on its upper parts. Although its back has been described as "without white specks" I have found a very few of them scattered among the interscapular feathers, and they are numerous and rather conspicuous on some of the scapulars and upper tail coverts. It would be more accurate, therefore, to say that the central portion of the back are so slightly spotted as to appear almost immaculate. In this respect, as Mr. Ridgway has pointed out (Proc. U. S. Nat. Mus. XIII, 1890, 311), the type of *coturniculus* resembles *P.*

spilonota (Gould) and *P. sharpei* (Rothsch. and Hart.) of the Galapagos Islands. I have seen no example of true *spilonota*, but two specimens of *sharpei* (from Indefatigable Island) before me have bills quite as stout as those of typical representatives of *jamaicensis*. For this reason I considered it improbable that either of the Galapagos birds can have any very close relationship with the extremely slender-billed type of *coturniculus*.

The majority of my California specimens of the Black Rail are even smaller than the type of *coturniculus* and at least two of them have equally slender bills. In regard to the white markings of their upper parts they vary considerably with age and to a less degree individually. Several birds have the back only sparsely and obscurely spotted, but in no one of them is it so nearly immaculate as in the type of *coturniculus*. Those with the least amount of white are all young, as is the case with my eastern specimens, also. I do not find that there is any constant or even average difference between west and east coast birds with respect to this spotting.

In the light of the evidence just given it seems to me safe to conclude that the specimen of the so-called Farallone Rail, hitherto regarded as unique, is nothing more nor less than a somewhat aberrantly marked but otherwise quite typical, immature representative of the Black Rail which inhabits the mainland of California and is by no means uncommon there — at least locally. This strongly characterized form should therefore bear the name *coturniculus*.

If my view of the matter as above stated be correct it is no longer surprising that the type of *coturniculus* was obtained on the Farallones, for these rocky islands lie due south of, and only about twenty miles distant from, Point Reyes where, as we now know, the California Black Rail occurs numerous in autumn. I am not aware that it has been found breeding in the marshes on this promontory although that it may do so, at least sparingly, seems probable; nor have I knowledge that it ever frequents them in winter. Indeed, the only definite evidence that I possess respecting its seasonal occurrence there is that afforded by letters received from Mr. Allen and by specimens of the birds which he has sent

¹ Proc. U. S. Nat. Mus., XIII, 1890, 311.

me. The dates on which the latter were taken range from October 24 to November 26, 1897.

The Black Rails which inhabit the eastern United States and Jamaica may be easily distinguished from those found in California by the following characters:—

***Porzana jamaicensis* (Gmel.).**

BLACK RAIL.

Larger with stouter deeper bill; the chestnut brown of the upper parts chiefly confined to the nape and nearly or quite wanting on the crown which is plain dark plumbeous or slaty, seldom if ever tinged with chestnut brown even in young birds.

Habitat. West Indies (Jamaica and Cuba) and eastern United States, ranging as far north as Massachusetts and Illinois, as far west as western Kansas. Said to inhabit Middle and South America also.

***Porzana jamaicensis coturniculus* Ridgway.**

CALIFORNIA BLACK RAIL.

Smaller with much slenderer bill; the plumbeous of the under parts deeper, the chestnut brown of the upper parts brighter and more extended, forming a broader patch on the nape and tinging more or less strongly and generally much of the top of the head where there is often no pure unmixed plumbeous or slaty save on the forehead.

Habitat. Coast region of California, occurring abundantly just to the north of San Francisco.

***Porzana jamaicensis* (Gmel.).**

No.	Sex	Locality and Date	Wing	Tarsus	Culmen from base of feathers	Depth of bill at nostril
3923 ¹	♂	Salem, N. J., June —, 1857,	3.00	.87	.52	.22
48733 ¹	♂	Mt. Pleasant, S. C., Nov. 9, 1906,	2.90	.87	.51	.21
46671 ¹	♂	Key West, Fla., Mch. 11, 1890,	3.05	.91	.57	.24
673 ²	♂	Merrits Inlet, Fla. Apr. 10, 1886,	2.95	.93	.57	.21
674 ²	♂	Cook Co., Ill., May 29, 1885,	2.82	.87	.50	.23
Average			2.94 +	.89	.53 +	.22 +
48695 ¹	♀	Key West, Fla., Apr. 5, 1900,	3.08	.92	.53	.21
11896 ³	♀	Tortugas, Fla., Spring, 1859,	2.91	.85	.54	.22

¹Collection of William Brewster.

²Collection of E. A. and O. Bangs.

³Collection of U. S. Nat. Museum.

No.	Sex	Locality and Date	Wing	Tar- sus	Culmen from feathers	Depth of bill at base of nostril
188738 ²	♀	Dade Co., Fla., Nov. 12, 1901,	3.05	.92	.54	.22
26825 ²	♀	near Spanishtown, Ja., Aug. —, 1862,	2.67	.90	.56	.23
Average			2.93—	.90—	.54+	.22
			(July or			
48492 ¹	?	Plymouth Harbor, Mass., Aug., 1869,	3.04	.85	.55	.25
78384 ²	?	Washington, D. C., June 6, 1879,	2.97	.85	.58	.20
97717 ²	?	Piscataway, Md., Sept. 25, 1877,	2.90	.90	.55	.20
149791 ²	?	Rappahannock R., Va., Oct. —, 1906,	2.95	.85	.53	.20
191765 ²	?	Northampton Co., Va., Oct. 14, 1904,	2.95	.85	.53	.21
103588 ²	?	off Pensacola, Fla., Mar. 10, 1885,	2.90	.90	.50	.20
41898 ²	?	western Kansas, Aug. 25, 1865,	2.98	.90	.61	.22
27505 ²	?	Neosho Falls, Kansas, ————	3.02	.83	.53	.21
Average			2.96+	.87—	.55—	.21+
Total average			2.95—	.88+	.54+	.22—

Porzana jamaicensis coturniculus Ridgw.

No.	Sex	Locality and Date	Wing	Tar- sus	Culmen from feathers	Depth of bill at base of nostril
3924 ¹	♂	———, Cal., Jan. —, 1874,	2.63	.79	.58	.17
47680 ¹	♂	Point Reyes, " Oct. 24, 1897,	2.65	.80	.57	.19
47681 ¹	♂	" " " " " "	2.60	.85	.55	.16
47682 ¹	♂	" " " Nov. 9, "	2.66	.85	.59	.14
47683 ¹	♂	" " " " " "	2.72	.85	.52	.19
47684 ¹	♂	" " " " 26, "	2.60	.82	.56	.20
47685 ¹	♂	" " " " " "	2.70	.85	.54	.19
47686 ¹	♂	" " " " " "	2.64	.83	.58	.19
47687 ¹	♂	" " " " " "	2.70	.81	.60	.21
Average			2.65+	.83—	.56+	.18+
47688 ¹	♀	Point Reyes, Cal., Oct. 24, 1897,	2.71	.81	.55	.19
47689 ¹	♀	" " " " " "	2.70	.84	.52	.20
47690 ¹	♀	" " " Nov. 9, "	2.55	.78	.51	.17
47691 ¹	♀	" " " " 25, "	2.55	.77	.52	.20
47692 ¹	♀	" " " " " "	2.60	.70	.52	.17
47693 ¹	♀	" " " " " "	2.59	.76	.50	.16

¹Collection of William Brewster.²Collection of U. S. Nat. Museum.³Collection of Mus. Comp. Zoölogy.

No.	Sex.	Locality and Date				Wing	Tar- sus	Culmen from feathers	Depth of bill at base of nostril
47694 ¹	♀	Point Reyes, Cal.,	Nov. 25,	1897		2.59	.77	.54	.19
47695 ¹	♀	"	"	"	"	2.59	.74	.54	.20
47696 ¹	♀	"	"	"	"	2.60	.81	.53	.17
47697 ¹	♀	"	"	"	"	2.63	.76	.50	.19
47698 ¹	♀	"	"	"	"	2.68	.78	.52	.18
47699 ¹	♀	"	"	"	"	2.65	.83	.50	.21
47700 ¹	♀	"	"	"	"	2.61	.76	.50	.19
47701 ¹	♀	"	"	26,	"	2.53	.77	.53	.18
3925 ¹	♀	San Francisco,	"	—, 1874,		2.53	.78	.52	.17
Average						2.61—	.78—	.52	.18+
45815 ¹	?	Alvisco, Cal.,	Dec. 1,	1892,		2.50	.78	.52	.20
45816 ¹	?	"	"	"	"	2.59	.79	.54	.17
Average						2.54+	.78+	.53	.18+
Total average						2.62—	.79+	.54—	.18+

Type of *coturniculus*.

12862 ²	?	Farallones, Cal.,	"Registered"
		Oct. 13, 1859,	2.73 .75 .52 .16

If I have dealt at all satisfactorily and conclusively with the matters considered in this article my success has been due very largely to the assistance so kindly given me by the officers of the Smithsonian Institution who, with characteristic liberality, have placed quite at my disposal the entire series of Black Rails contained in the collections under their charge. I am also indebted to my friend Mr. Outram Bangs for an opportunity of examining specimens from his collection which have proved of great service. Had it not been for the free use which I have been permitted to make of all this material, and especially of the precious type of *coturniculus*, I should have been utterly unable to cope with what has been long and justly considered a peculiarly difficult problem.

¹Collection of William Brewster.²Collection of U. S. Nat. Museum.

GENERAL NOTES.

The Black Tern at Philadelphia, Pa.— On October 20, 1906, returning from an unsuccessful ducking trip behind Petty's Island, in the Delaware River, opposite Philadelphia, we (my brother and myself) observed a Black Tern (*Hydrochelidon nigra surinamensis*) which was flushed from the water about two hundred yards off Williams Street wharf, by a passing tug. It flew slowly up the river, keeping close to the shore, but beyond gunshot. It was plainly visible to us, as we were not over a hundred yards distance from it when it took wing, and the black color and white under tail coverts precluded any possibility of doubt as to its identity.

The Black Tern is given in Stone's 'Birds of Eastern Pennsylvania and New Jersey,' (p. 32) as a "rare or irregular transient" in this vicinity, and in the same book (p. 48) he says, "stragglers have been reported from the Delaware and Susquehanna Rivers," but I can find no records of its occurrence on the former river. Regarding this species in New Jersey, Mr. Stone says (p. 48 of his book), "transient, occurring during the fall migration on the New Jersey coast"; and from this remark I infer that the bird seen by us was one of these transients, driven inland by the stormy weather and northeast winds that prevailed for about a week previous to our observation. Its presence here cannot be attributed to any other cause, which is undoubtedly the true reason of its occurrence.

The Greater Yellow legs (*Totanus melanoleucus*) occurs here only after northeast storms, which also occasionally drive inland other rare species of water birds from the New Jersey coast. The Common Terns (*Sterna hirundo*) are sometimes abundant on the Delaware River above Philadelphia during northeast storms and always disappear after their abatement.

Mr. Stone is correct in considering the Black Tern a "rare or irregular transient" in this vicinity, for it is of such extremely rare occurrence that there is no record of its capture during recent years on the Delaware.—
RICHARD F. MILLER, *Philadelphia Pa.*

Ross's Snow Goose in Colorado.— On December 23, 1906, there was shot on the Kennicott Club Lake, 3½ miles east of Longmont, Colo., a male Ross's Snow Goose (*Chen rossii*). The bird was killed by Capt. Eli, U. S. A., presented by him to Mr. Mart H. Watrous, mounted by Mr. Rudolph Borchardt, and later generously presented by Mr. Watrous to the Colorado Museum of Natural History, Denver, where it may now be seen on exhibition. It was associating with a flock of Mallards (*Anas boschas*), with which it had also been seen by the lake keeper the day before. Two or three days previous to this time the keeper's wife had seen a "flock of white geese about the same size as this one," but whether they were Ross's Geese or not can only be conjectured. I have examined the bird very carefully, comparing it with a specimen from my own col-

lection, and the identity is unquestionable. The commissure is typical and the maxillary tubercles, though not prominent, are present. We thus are able to tally another species for Colorado.—A. H. FELGER, *Denver, Colo.*

The Whistling Swan at Martha's Vineyard, Mass.—Two Whistling Swans (*Olor columbianus*) were shot at Squibnocket, Martha's Vineyard, Mass., by Mr. Gardiner Hammond. One was taken November 28, 1906, and the other the next day, November 29. These specimens are in my collection.—JOHN E. THAYER, *Lancaster, Mass.*

Whistling Swan (*Olor columbianus*) in Massachusetts.—Recent records of the occurrence of the Whistling Swan in this State are sufficiently rare to warrant mentioning the capture of three fine adult specimens on Nantucket on Nov. 29, 1906. A party of sportsmen, consisting of Messrs. J. E. Flynn, H. K. Perkins, and J. H. Ashley of Bridgewater, and L. A. Harvard of Taunton, Mass., while duck shooting from a blind on Tacacha Pond, near Quidnet, Nantucket, saw three large white birds alight in the pond which they at once recognized as swans. They were exceedingly wary at first, but after much patient waiting they finally swam up near enough to risk a shot at long range, and all three of the birds were eventually secured after shooting them over several times, at the expenditure of some seventeen shots.

I saw all three of the birds, on exhibition in a market in Bridgewater, and succeeded in securing one of them, an adult female, for my collection; it measured 51½ inches in length and 84 inches in extent. Another was secured for the Museum of Comparative Zoölogy in Cambridge, and the third was mounted for Mr. J. E. Flynn.—A. C. BENT, *Taunton, Mass.*

Ardea egretta in New Mexico.—In view of the increasing scarcity of all the Egrets the undersigned wishes to put on record the capture of a specimen of *Ardea egretta*, on Nov. 5, 1906. It was shot on the lower part of the Rio Mimbres, about 20 miles above Deming, having been flushed amongst some willows bordering the Canaigre irrigating lake, the altitude of this lake being about 4400 feet; the weather was about freezing. The bird, an adult female, was alone and in excellent plumage.—E. L. MUNSON, *Major, Surgeon, U. S. A.*

Late Occurrence of the King Rail (*Rallus elegans*) in Wisconsin.—Dec. 19 last, a live King Rail (*Rallus elegans*) was brought to me by a boy who had caught it that day in a marsh on the shores of Beaver Dam Lake about two miles from this city. I questioned the lad as to the existence of any open spring of water in the vicinity and he assured me there was none. The rail was seen running through the grass as the boy had skated up to the marshy shore. The bird died the following night and on skinning the specimen I could observe no evidence whatever of an injury of any nature, though the bird was greatly emaciated.—W. E. SNYDER, *Beaver Dam, Wis.*

The Stilt Sandpiper,—a Correction.—On August 13, 1902, I took what I then thought to be a Stilt Sandpiper (*Micropalama himantopus*) on Matenic Island, Knox Co., Maine. The record as such was published in 'The Auk,' January, 1903, p. 65. Upon a more recent examination I find I am in error, and respectfully ask that the same may be corrected.—HUBERT L. SPINNEY, *Seguin Light Station, Popham Beach, Me.*

The American Rough-legged Hawk Breeding in North Dakota,—a Correction.—In the October number of 'The Auk,' 1901 (Vol. XVIII, p. 393), I recorded a supposed instance of the breeding of the American Rough-legged Hawk in Nelson Co., North Dakota. Soon after the publication of this note I examined a series of Ferruginous Roughlegs, in the melanistic phase, and became convinced that my record was erroneous. I should have published more promptly a correction of my error, except for an interesting question, raised by Dr. Louis B. Bishop's experience with some young Roughlegs, as to whether the black Roughlegs were not worthy of recognition as a distinct species, rather than as a mere color phase of *Archibuteo ferrugineus*.

On June 17, 1902, he found, near Lake Washington in North Dakota, a nest of black Ferruginous Roughlegs with four young. He killed the male parent bird and kept the four young alive until July 26, 1902, when all four were in melanistic juvenal plumage. A male and a female were then killed and the other two, also a male and a female, were left with our guide, Mr. Eastgate, to be reared to maturity in captivity. In December, 1902, the female killed and devoured the male; and on August 2, 1903, she was killed and preserved, after she had completed a moult into an adult melanistic plumage. This experience naturally suggested the idea that melanism is hereditary and, if it could be proven that the melanistic birds always breed true, there would be good grounds for supposing that these black hawks might eventually prove to be a distinct species. Pending further investigation and more evidence I postponed the matter; but during the past season we obtained sufficient evidence to overthrow our theory. We secured two young Roughlegs from a nest in Saskatchewan and reared them in captivity, with the interesting result that one developed into a melanistic bird and one into a bird of normal plumage. Whereas a vast amount of evidence would be necessary to prove the validity of a distinct species, this evidence seems to me conclusive as to the correctness of the color phase theory. I am therefore satisfied that the nest I reported in 1901 belonged to a pair of Ferruginous Roughlegs, and I must apologize for my error in recording it.

By way of additional evidence, I might mention another case which came to our notice this past season in Saskatchewan. We found a nest of young Ferruginous Roughlegs on June 27 and saw both parents plainly, one of which was melanistic and one normal. Dr. Bishop visited this nest again on July 24 and flushed from beneath the nest one black and one or two normal young. I am indebted to Dr. Bishop for the use of his notes

in this connection, which I felt that I ought to offer by way of explanation.
— A. C. BENT, *Taunton, Mass.*

The Pigeon Hawk in Wayne Co., Michigan.— Mr. Herbert Spicer secured a Pigeon Hawk (*Falco columbarius*) on P. C. 671, Ecorse Township, Sept. 15, 1906. As an illustration of how easily a rare bird can be disregarded, this hawk was perched on the dead limb of a solitary hickory tree in the center of a buckwheat field and was indulging in a sun bath with wings and tail partly spread. We were passing on a road about 200 yards away. Mr. Spicer thought it a Sharp-shinned Hawk, but I insisted it did not have tail enough and was a female Sparrow Hawk. He was not satisfied; so I waited while he stalked the bird and secured it. I prepared it for my collection and found it a female with stomach empty. I see a hawk or two every year that I consider of this species but do not care to record them as such. The only other positive record is a female secured by me September 13, 1890, in Ecorse Township. The bird was flying across the Detroit River and when first seen was on the Canadian side.— J. CLAIRE WOOD, *Detroit, Mich.*

The Goshawk in Montgomery Co., Virginia.— A week of cold weather early in November last, with the mercury down to 22°, culminated in a blow, and a six-inch snow. During this snowstorm, a Goshawk (*Accipiter atricapillus*) was shot near Blacksburg and sent in to the College to me on Nov. 19, 1906. It was an adult female, in fine blue plumage, a trifle under size, and was quite fat. It is now No. 1362 of my collection. The Goshawk has been recorded from Virginia before, though I know of no very definite record as to time and locality. Dr. Rives, in his 'Catalogue of the Birds of Virginia,' merely says, "Very rare winter visitor," and quotes Coues and Prentiss as to Washington, D. C., occurrences of the species. This record, therefore, may be of some interest.

Every winter for the past sixteen years, I have looked for Crossbills to come here; it was therefore with some satisfaction that on the 16th of January, 1907, I heard and saw a solitary male *Loxia curvirostra minor*, on a small spruce, about twenty feet high, on the campus. It was entirely alone, was feeding on the cones, and uttering its call, and allowed me to walk up to the tree and all around it, to get a good look at it, and I left it there feeding when I was satisfied of the identification. I thought it unnecessary to kill it merely for the record, particularly as the bird ought to be found here every winter. I also have a large series from Yemassee, South Carolina, in my collection.— ELLIS N. A. SMYTH, JR., *Blacksburg, Va.*

The Barn Owl in Massachusetts.— A Barn Owl (*Strix pratincta*) was taken at Weston, Mass., Nov. 14, 1906, by Mr. Charles Merriam. The specimen is now in my collection.— JOHN E. THAYER, *Lancaster, Mass.*

Great Gray Owl (*Scotiaptex nebulosa*).—The general rarity of this species and the irregular intervals of its visits, should warrant a record of all specimens that come to our notice. The following have been captured during the present winter:—

The S. L. Crosby Co., taxidermists, Bangor, Me., have received eight specimens up to Feb. 1, 1907, these being the first sent to them for the past three years.

Mr. Walter D. Hinds, taxidermist, Portland, Me., had received the following up to Feb. 8, 1907. Two from Bailey's Island, Portland Harbor; two from Cape Elizabeth, Me.; and one from Damariscotta, Me. The first specimen was received Nov. 8, 1906.

Mr. W. P. Conger, taxidermist, Burlington, Vt., has received six specimens, with the following data —

1 ♂, Malone, N. Y., Jan. 1, 1907.

1 ♀, Shelburne, Vt., Jan. 2, 1907.

1 ♂, Champlain, N. Y., Jan. 2, 1907.

1 ♀, South Burlington, Vt., Feb. 2, 1907.

1 ♀, Colchester, Vt., Feb. 7, 1907.

1 ♂, Colchester, Vt., Feb. 11, 1907.

Mr. C. E. Dionne, of Laval University, Quebec, under date of March 6, 1907, informs me that he has examined six specimens the past winter.

Rev. C. W. G. Eifrig, Ottawa, Ont., in writing on winter birds (The Ottawa Naturalist, Vol. XX, Feb. 15, 1907) states: "Of the Great Gray Owl, I have seen and heard of four so far this winter, all of which have found their way into the hands of Henry the taxidermist."

Mr. Henry W. Howling, taxidermist, Minneapolis, Minn., had received eleven specimens prior to Feb. 7, 1907.

Mr. J. D. Allen, taxidermist, Mandan, N. Dak., under date of March 11, 1907, writes: "I have never had any Great Gray Owls in the flesh until this winter. Two fine specimens have been received, one from Moorhead and two from Detroit, Minn."—RUTHVEN DEANE, *Chicago, Ill.*

Great Gray Owl (*Scotiaptex nebulosa*) in Rhode Island.—Through the kindness of Messrs. Angell and Cash, taxidermists, Providence, R. I., I am enabled to quote the capture of a third specimen for the State. This bird was shot within a mile of the city limits of Providence, on Nov. 19, 1906, and proved to be a male. The two previous records are given in 'Birds of Rhode Island,' Howe and Sturtevant, 1899, p. 62, one specimen taken in 1870 and the other March 25, 1883.—RUTHVEN DEANE, *Chicago, Ill.*

Aggressive Screech Owls.—Mrs. John W. Ames of Cambridge has kindly given me permission to publish the following account of an interesting experience which she had with some Screech Owls at Concord, Massachusetts, in June, 1906. I give it in her own words as follows:—

"I came to Concord to the Manse on June 14. A day or two after my arrival I walked down the avenue after supper and as I stood near the

gate an owl hooted and flew close by my head, and then, after a minute, flew back again. I thought nothing of it, until, a few evenings later, my cook came in much frightened and said she had been hit in the head by a bat. She had been about where I was when the owl flew past me, and her description of the sound it made seemed to make it more probable that it was an owl than a bat. A few days later she was struck again as she walked down the avenue, and both times the skin was broken in several places on the side of her head, and the blow was severe enough to be painful for some days. We soon heard from all our neighbors stories of how, as they passed our gate, the owl flew out and struck them, and almost every evening we could hear some signal of distress from the unwary passers-by, such as, 'Look out for the bird!' or 'What is it? Is it a bat?' One man, I was told, had his eyelids seriously cut.

"One evening as I sat in the house I heard what seemed to be an unusual disturbance among the owls, and I wondered if the young ones might be learning to fly. So I walked down about half way to the gate, with a friend, taking the precaution to put hoods over our heads. We stood there for a few minutes, listening, and then, as it was hot, I dropped back my hood. In an instant, with an angry cry, the owl struck me on the side of the forehead, leaving three or four scratches. I had no time to see the bird, but some days later I had a fairly good view of it, as it flew over me to an elm tree on the hill opposite our house. It seemed to me then to have the appearance and usual size of the Screech Owls which we see often about here.

"One evening, about June 25, a number of people came up, protected by baseball masks or hoods, to investigate the whereabouts of the owl's nest, which appeared to be in the clump of trees along the wall at the foot of the hill, and directly opposite our gate. Two boys in the party threw stones at the trees to start out the owls, and the bird showed off as usual, striking several persons in the head. But the next morning, Mr. Ferguson, who keeps a tub of water for his cow under the trees where the owls seemed to live, brought in the body of an owl which had apparently been drowned, as it was found in the tub. Nobody knows anything of the manner of its death and the boys, whom I questioned, said they did not, to their knowledge, hit any of the owls. But I could not help feeling that the poor bird had been struck by one of their stones, and fallen, stunned, into the water. Since then we have heard nothing of the owls except what appeared to be an unwonted crying of the little ones for the next week or two, and I supposed that they were hungry, for, though they could fly, they probably were not yet trained to find their own food."

I have some further notes concerning this family of owls from Mrs. Alfred Worcester of Waltham who, in company with several friends, visited the Manse on the evening of June 26. The party had provided themselves with fencing masks, which proved useful, as will appear from her account of the experience, which is as follows:—

"As it began to grow dark, I saw something every now and then moving among the trees opposite the entrance to the driveway, and when I crept up I could hear the owls snapping their bills, and spitting like a cat, and snarling. It was lucky I had on the mask, for while I was standing there, straining my eyes and ears, something suddenly swooped down without warning and gave me a hard blow on the side of the head, on the edge of the mask, at the same time uttering a scream of rage. A cousin of Mrs. Hoar's, who also had on a mask, was struck squarely in the face, and at the same moment we heard the scream of rage again. Apparently the hardness of the masks and our not being intimidated made the birds desist, for they did not attack us again, although we saw them fly from tree to tree, and clamber, parrot-like, up an inclined branch, and swing on a hanging one."

Mrs. Worcester adds that a pair of Screech Owls which bred "for a good many years" in a tree standing near a house in Arlington, Massachusetts, developed, in 1902, a habit "of attacking the people who went in and out of the yard, and even those who passed on the sidewalk."—WILLIAM BREWSTER, *Cambridge, Mass.*

The Snowy Owl (*Nyctea nyctea*) not generally Abundant in the Winter of 1906-1907.—I think there has been no record showing an unusual abundance of this species for two consecutive years, and our experience shows that there is a lapse of from five to ten years between these noticeable invasions. In the winter of 1905-1906 we had an unusual abundance scattered over the country, but the present season has been devoid of any remarkable flight south into the United States, though in Manitoba they are reported as abundant as last year. In many sections of the Provinces, New England, and the Middle West, my correspondents who received numbers last winter, have had but few this season, and in some instances none.

The following eleven specimens received by Angell and Cash, taxidermists, Providence, R. I., will be of interest as they record complete data. They were received between November 3, 1906, and February 12, 1907.

Nov. 3, ♂, Newport, R. I.

" 5, ♂, Hope Island, Narragansett Bay, R. I.¹

" 12, ♀, Fisher's Island, N. Y.

" 15, ♀, Monomoy Island, Mass.

" 15, ♀, New London, Conn.²

" 19, ♂, Monomoy Island, Mass.

" 21, ♂, Block Island, R. I.

" 28, ♂, Seaconnet Point, R. I.

" 28, ♀, New London, Conn.³

" 30, ♂, Norwich, Conn.

Feb. 12, ♀, Fisher's Island, N. Y.

¹Contents of stomach, a gray rat, head digested, otherwise whole.

²Contents of stomach, rat fur and bone pellets.

³Contents of stomach, dark flesh and feathers of Black Duck.

Where no mention is made of the contents of stomach it was empty or not examined.

Mr. Alexander Calder, Winnipeg, Man., and Mr. George E. Atkinson, Portage la Prairie, Man., inform me that these owls have been quite as numerous in their localities as they were in the winter of 1905-1906, when they were very abundant.

An interesting feature is that a number of persons who have this season received specimens, report the unusually light plumage, some examples being practically immaculate. Mr. Jas. H. Fleming, Toronto, Ont., writes under date of February 20, 1907, that Snowy Owls reached Toronto early in October (first record Oct. 12), and while the flight was not large, it was remarkable for the wonderful whiteness of the birds. Mr. Fleming states that among a dozen specimens examined there was not a dark one represented, and one taken on November 10, was as nearly spotless as a Snowy Owl can be.

Mr. P. A. Taverner, Detroit, Mich., under date of November 26, 1906, writes:

"This fall I have a few notes on Snowy Owls that you may find of interest.

"Oct. 29, 1906, male, Point Pelee, Ont. This is an almost pure white bird with but half a dozen or so light markings on the breast and a few more a shade darker on inner secondaries and scapularies. Specimen in my collection.

"Nov. 8, 1906, female, Point Pelee, Ont., the usual dark form and the only such bird that I have so far seen this fall.

"Nov. 9, 1906 (about), Port Huron, Mich., almost as white as specimen taken October 29.

"Nov. 9, 1906 (about), Port Huron, Mich., not quite as white as the last but still remarkably so. Both these birds were probably males but were not sexed.

"Nov. 10, 1906, Grosse Isle, Mich., male. Taken a few miles below Detroit. This is one of the very whitest owls I ever saw. Plucking out a few body feathers would make it immaculate.

"This flight is of more than usual interest from the pronounced whiteness of the birds taken. In all previous flights as far as I can gather the birds were of the usual heavily marked type. It shows I think that this flight comes from a different geographical source than previous flights. The only place that I know of where white birds are at all common is the Canadian Northwest, and it therefore looks as if it was from thence that these birds came, via my 'Hyperlaken Route.'"

Mr. J. D. Allen, taxidermist, Mandan, No. Dak., writes under date of March 11, 1907: "The Snowy Owls have not been as abundant in this vicinity during the present winter, as they were a year ago. About twenty specimens have been sent to me, while last winter I received about thirty." Mr. Allen also states that some years ago there was a most remarkable flight of these owls throughout the State and that he

secured over five hundred specimens, and the following year over three hundred and fifty. Since that time they have averaged from ten to forty during the winter season.

I am very much indebted to those who have kindly communicated their observations and should be glad to receive further records from any who may have observed this species within the past few months.—RUTHVEN DEANE, *Chicago, Ill.*

American Hawk Owl (*Surnia ulula caparoch*) in Rhode Island—

I am indebted to Messrs. Angell and Cash, taxidermists, Providence, R. I., for information regarding the capture of a male Hawk Owl at West Greenwich, R. I., Nov. 16, 1906. The stomach was empty. I think that this may be given as the first authentic record for this species in the State. The only previous citation would seem rather a doubtful record (*Birds of Rhode Island*, Howe and Sturtevant, 1899, p. 63) as follows: "The only record is of one taken by Mr. W. A. Aldrich (exact locality not known)." — RUTHVEN DEANE, *Chicago, Ill.*

Identity of *Tyrannula mexicana* Kaup.—In his recent paper on the genus *Myiarchus* (Proc. Biol. Soc. Wash., XVII, pp. 21-50, 1904), E. W. Nelson expressed the belief that Kaup's name *Tyrannula mexicana* was based upon the species usually known as *Myiarchus cinerascens*. No changes in current usage were made by him, however, these being deferred until such time as Kaup's type might be examined. While in Germany a few months ago, I therefore took the opportunity to visit the Darmstadt Museum (Grossherzog. Hessisches Museum) and compare this type with recently collected specimens. Dr. G. von Koch of the Darmstadt Museum readily found it for me and kindly extended the courtesies of the museum, for which I am very grateful. The specimen has been on exhibition and its color is considerably altered. The outer tail feathers, so important for comparison, are faded to such an extent that their markings cannot be determined except by very careful examination. In ordinary light, no markings are evident, but by transmitted light the relations of the light and dark areas are reasonably plain, and it may be seen that the dusky on the inner web is confined chiefly to the distal third of the feather and that it broadens across the tip as is characteristic of *cinerascens*. The outer web of the feather also shows a wedge-shaped dusky area. The second and third feathers underlying the outer tail feather are scarcely faded and their markings unchanged. Although not so broadly dusky at the tip as in some specimens, they agree with those of '*cinerascens*' and differ decidedly from '*mexicanus*.' Direct comparisons were made with specimens from the Biological Survey collection selected for the purpose by Mr. Nelson (No. 144872 from Cuernavaca, Morelos, representing '*cinerascens*' and No. 144861 from Minatitlan, Vera Cruz, representing '*mexicanus*'). After making these comparisons, I am convinced that Kaup's type represents the species usually called *cinerascens* and not the

species to which the name *mexicanus* has been generally applied. Thus, it appears that Nelson's suspicions were well grounded and the changes of names suggested by him are necessary. The name *mexicanus* becomes a synonym of *cinerascens* and *cooperi* becomes available for the species recently known as *mexicanus*.—WILFRED H. OSGOOD, *Biological Survey, Washington, D. C.*

White-winged Crossbill at Raleigh N. C.—On February 23 a small flock, roughly estimated to contain about thirty individuals, was observed in Pullen Park, about two miles west of town. The birds seemed quite tame and were working about in the tops of the red cedars, apparently feeding on the cedar berries. Three specimens were collected, two of which, adult male and female, were secured by me in the flesh for our museum. So far as I know, this is the first recorded occurrence of the White-winged Crossbill in North Carolina. My assistant was out again all day yesterday, February 25, in quest of more specimens, but none were seen.—H. H. BRIMLEY, *Curator, N. C. State Museum.*

***Loxia curvirostra minor* in Florida.**—So far as I have been able to ascertain, no record of the occurrence of the American Crossbill in Florida existed prior to December last when Mr. W. W. Worthington collected several specimens on Amelia Island, Nassau County, a few miles below Fernandina. He writes me: "Red Crossbills were common in the pine barrens where I met you that day in the carriage. The first one was taken Dec. 4, 1906. They were common all through December, some flocks seen having at least 50 individuals. Small scattering flocks were seen and were still there on Jan. 16, 1907, when the last were taken."

I am obliged to Mr. Worthington for permission to publish this record.—R. W. WILLIAMS, JR., *Tallahassee, Florida.*

The Vesper Sparrow on Long Island, N. Y., in Winter.—On February 12 I observed two or three Vesper Sparrows (*Poæcetes gramineus*) at Bellmore, Long Island. It was very difficult to make out the white in the tail against a background of snow, and I had to follow them about and get them against a dark background to make out this mark satisfactorily. Two birds seen February 10, some where between Babylon and Massapequa, which I was unable to identify, I now believe to have been this species.—JOHN TREADWELL NICHOLS, *New York City.*

Malformed Bill of Rose-breasted Grosbeak.—On September 4, 1904, a boy brought to me an adult female Rose-breasted Grosbeak (*Zamelodia ludoviciana*), the bill of which presented a curious malformation. Careful examination shows that the condition was not caused by injury, as there is no trace whatever of a fracture, and the upper mandible has grown strongly downwards. The eye cavity—which in the normal state is

very nearly circular — is forced into a pyriform shape. The malar and squamosal bones are bent almost at right angles, the junction of the angle pressing forcibly against the muscles of the lower mandible. (See illustration.) From the irritated appearance it must have caused considerable pain to the bird.

The entire body was fearfully emaciated and the bird was almost dead. It was absolutely impossible for the bird to have fed itself, and from the appearance of the sides of the mouth it was evident that another bird had been feeding it. A few soft seeds, about the shape of wild rice, though smaller and apparently predigested, were protruding from one side of the mouth, but the bird could not pass them through far enough to swallow them.—FRANK M. WOODRUFF, *Chicago Academy of Sciences, Chicago, Ill.*



Malformed bill of Rose-breasted Grosbeak

Breeding of the Rough-winged Swallow in Berkshire County, Massachusetts.—On July 3, 1906, as I was waiting for a train at the railroad station in Glendale, Berkshire County, Massachusetts, I saw a pair of Rough-winged Swallows flying back and forth over the Housatonic River. Skimming just above the surface of the rapidly flowing water they passed and repassed the station very many times, giving me excellent opportunities for making out their characteristic coloring and markings. Once they alighted on a large, flat-topped boulder at the water's edge where they moved about by a succession of short, quick runs, reminding me of Semipalmated Plover feeding on a sand beach. I have never before seen swallows of any kind move so quickly by the aid of their feet alone. After drinking at a pool of rain water which had collected in a hollow in the rock, these birds took wing again and resumed their regular, coursing flights. They frequently passed under a bridge by which the road from the village to the station crosses the river, and twice they turned sharply upwards and disappeared for a moment among its supporting rafters, which were twenty-five or thirty feet above the water. Suspecting that they might have a nest there I went out on the bridge, but I could not well see under it. On a telephone wire stretched across the river near the bridge I found, however, three young Rough-winged Swallows, fully grown and feathered, clamoring loudly for food, which their parents brought to them every few minutes. I had a fine view of these young birds, for they were perched in full sunlight within ten or twelve yards of me. Probably

there were one or two others of the brood under the bridge, but of this I could not make sure. Two of those on the wire sat facing me, showing very distinctly the rich, reddish brown or fulvous markings on the throat and upper part of the breast, which are so characteristic of the young of *Stelgidopteryx serripennis*. Their plumage was wholly free from down, and their wings and tails appeared to be of full length. They must have been out of the nest for a week or more, but I consider it probable that they were hatched and reared in the immediate neighborhood. Although from the first I had entertained no doubts as to the identity of the old birds, I was glad of the opportunity here afforded for directly comparing them with a number of Bank Swallows which were flying about over the river just above the bridge. Whenever the two species came together it was easy to distinguish them, almost at a glance, for the Rough-wings looked a third larger and very much browner than the Bank Swallows, and they showed no traces of the dark pectoral band so conspicuous in the latter birds.—WILLIAM BREWSTER, *Cambridge, Mass.*

Another Connecticut Warbler from Maine.—The publication by Mr. W. H. Brownson in the last number of 'The Auk' (p. 105) of seven records of the Connecticut Warbler from Maine leads me to record another specimen of this bird which I shot in Eliot, York Co., Maine, on September 12, 1894. This specimen, which was a bird of the year, is now in my collection.—ARTHUR H. HOWELL, *Washington, D. C.*

The Blue-gray Gnatcatcher in Massachusetts.—A male Blue-gray Gnatcatcher (*Poliophtila caerulea*) was shot at Hyde Park, Mass., on Sept. 22, 1906, by Frank E. Webster of this town. The bird was alone, feeding in a clump of white birches in a yard. It was very lively in its actions, continually flitting about and now and then uttering a little squeaking note. The skin is now in the collection of Mr. John Thayer, Lancaster, Mass. — H. G. Higbee, *Hyde Park, Mass.*

The Blue-gray Gnatcatcher in Philadelphia County, Pa.—On April 19, 1904, while searching for Song Sparrows' nests in a bunch of nettles at Frankford, this county, I found a dead Blue-gray Gnatcatcher (*Poliophtila caerulea*) lying in the weeds. An examination found it badly torn and mutilated, and useless as a specimen; its skull however, was preserved. It had undoubtedly been killed by boys with a sling-shot, as its condition indicated such a fate, and had been dead several days as it was infested with vermin.

The Blue-gray Gnatcatcher is an extremely rare transient in the Delaware Valley, and my record constitutes the first spring record, and the second one of its occurrence in this county. In the enumerated list of specimens in Stone's 'Birds of Eastern Pennsylvania and New Jersey' (p. 148) there is one record for Pennsylvania, and that is the specimen alluded to above, which was taken September 3, 1880, at Chestnut Hill,

by Dr. W. L. Abbott. Stone says (on this page) that it is "only a rare straggler in the Delaware Valley," and on page 32 he considers it as a "rare or irregular transient" in the vicinity of Philadelphia, which indeed it is.

The only other record of its occurrence in the Delaware Valley which I have been able to find is the observation of one by three different persons at Media, Delaware County, Pa., in 1905. This bird, presumably the same individual, was seen on May 1 by Philip H. Moore, on May 2 by Lydia G. Allen, and on May 7 by Alice Fussel. (See 'Cassinia' for 1906, p. 67).

The Blue-gray Gnatcatcher may have been a summer resident in the Delaware Valley in former years, "as there is a very young bird in the collection of the Academy of Natural Sciences, obtained many years ago by Wm. Wood" (Stone's Birds of Eastern Penn., and N. J., p. 148, footnote), but it must now be considered as an extremely rare transient in this vicinity.—RICHARD F. MILLER, *Philadelphia, Pa.*

Two Interesting Nebraska Records.—A male specimen of the Iceland Gull (*Larus leucopterus*) in the first winter plumage was shot by a boy near Dorchester, Nebraska, January 15, 1907, and later was brought to the University for identification. The bird was among a flock of crows when first seen, and was taken for a "white crow." It was easily shot because of its remarkable tameness. This record not only adds a new bird to the Nebraska list, but, I believe, extends the known winter range of the species considerably to the southward, the usual limit in the interior being considered the Great Lake region. The dimensions of this specimen, taken in inches, are: expanse, 47.5; length, 24.5; wing, 16.25; tail, 6.25; chord of culmen, 1.80.

The second record is that of an unusually early appearance of the Bohemian Waxwing (*Ampelis garrulus*) within the State. This bird does not usually reach the latitude of Nebraska until the middle of November, but on October 27, 1906, three specimens were shot from out a flock at the forest reserve near Halsey, Nebraska, and two of these were sent to the University for naming.—MYRON H. SWENK, *University of Nebraska, Lincoln, Neb.*

Autumn Records of Golden Plover and Lapland Longspur in Wayne Co., Michigan.—In the summer of 1906 I was engaged to engineer the laying out of a cemetery on P. C. 40, Springwells Township. As the work was to be according to strictly modern ideas, all the surface dirt was handled, and by autumn the twenty acres was a long narrow piece of smooth barren ground, different from any other piece in that vicinity. This attracted a pair of Golden Plover (*Charadrius dominicus*) October 13, and a flock of fifteen Lapland Longspurs (*Calcarius lapponicus*) November 7. The plover were inspected at 200 feet and the longspurs at less than half that distance through the powerful transit telescope.

While not familiar with all the plumage variations of the Black-bellied and Golden Plover I based my identification on the fact they appeared different from all the Black-bellied Plover I have seen, and had no conspicuous white rump patch.

The longspurs dropped suddenly, like rain from the clouds. They saw me at once and squatted. After an examination through the instrument I approached within about thirty feet of them when one sprang into the air with a twitter and simultaneously the remainder burst into flight, so to speak, and flew beyond the range of vision. November 25, another bird was seen in company with a Prairie Horned Lark. This was in the village of Grosse Pointe Farms. Both the Golden Plover and Lapland, Longspur are considered rare here in autumn.—J. CLAIRE WOOD, *Detroit, Mich.*

Notes from Western New York.—The following records, though not substantiated by specimens, may be worthy of record, as in every case they are of positive identification. The observations were made in the vicinity of Canandaigua, Ontario County, New York, and in a number of cases in conjunction with Mr. Frank T. Antes of Canandaigua.

Sterna caspia.—Six birds of this species in adult spring plumage passed the end of the Canandaigua Lake pier within fair range in the early morning of May 5, 1906. They passed on over the lake in a westerly course till out of sight. There is one other record for Ontario County,—“three specimens at Canandaigua, April 28, 1895.”

Falco peregrinus anatum.—A single bird of this species was observed as it passed over the valley of West River, or the Inlet of Canandaigua Lake, on June 2, 1906. I believe this is the second record of this bird in Yates County.

Nuttallornis borealis.—I recorded a single bird near Mertensia on May 17 and one on May 19, 1906, in the same locality. These are the second and third Ontario County records.

Empidonax flaviventris.—I observed one at Mertensia, May 17, 1906; at Canandaigua, two May 29, and seven June 1, 1906. Of five observed at Canandaigua, May 30, 1906, two were taken by Mr. F. T. Antes. Hitherto there were no records for this species in Ontario County, though it is probably an uncommon but regular migrant.

Melospiza lincolni.—I observed a Lincoln's Sparrow at Canandaigua, May 13, 1906. This is the first record for Ontario County.

Helminthophila pinus.—One observed at Canandaigua by Mr. F. T. Antes on May 13, 1906, is the first Ontario County record.

Helminthophila chrysoptera.—I observed a singing male of this species at Mertensia, Ontario County, on May 17, 1906; and on June 3, 1906, found another male in song at West River, Yates County, where it is very likely the bird breeds. This warbler is recorded as breeding at Naples, Ontario County. This is the second Yates County record.

Helminthophila peregrina.—I observed two in song at Mertensia, May

17, 1906, and one singing bird in Victor, May 22, 1906. These are the first Ontario County records.

Dendroica cerulea.—Mr. F. T. Antes and I observed a male of this species at Canandaigua, May 14, 1906. Though this warbler breeds locally in neighboring counties, I believe this is the first Ontario County record. I observed two at Victor, Ontario County, on May 22, 1906.

Dendroica vigorsii.—On each of the following dates Mr. Antes and I observed a bird of this species at Canandaigua,—April 28, May 6, 7, and 9, 1906. There was no Ontario County record formerly. We observed one on June 2 and another on June 3, both singing, in likely breeding places in the vicinity of West River, Yates County. These are the first records for this county.

Dendroica palmarum.—One observed October 7, 1905, and one May 13, 1906, at Canandaigua, are the first Ontario County records.

Seiurus noveboracensis.—On June 2, 1906, Mr. Antes and I recorded eight birds of this species, seven of which were singing from the swampy woods bordering West River, Yates County. One pair we observed at close range. It would seem that this bird must be a fairly common summer resident there. At Canandaigua the last migrant was observed May 16.

Geothlypis agilis.—Mr. Antes had the good fortune to record a spring migrant of this species at Canandaigua in the early morning of May 29, 1906. He followed up an unfamiliar warbler song to a dense but small thicket. After patient waiting he obtained several very near and convincing views of a male Connecticut Warbler as it sang. Careful searches in the afternoon of the same day and the next morning failed to reveal this warbler in the near vicinity. Early in the morning of May 31, Mr. Antes and I came upon a Connecticut Warbler in an old, overgrown garden about two-thirds of a mile west of the spot where Mr. Antes had observed his bird two days before. Presumably the two observations were of the same bird. While Mr. Antes returned for his gun, I had a half hour in which to study the bird carefully. Its loud song had first made us aware of its presence, and it proved a persistent singer. From a small apple tree in the rear of the garden it flew to a clump of willows standing by itself in an open pasture. I was able to come up to the clump, and, looking within, see the warbler but a few yards from me. The white eye ring was distinct and prominent, and the breast uniform bluish gray. When a pair of Song Sparrows drove it from the clump, it flew to a bushy fence border, and here I had even clearer views of it. Several times I saw it in the act of singing. When Mr. Antes returned it was again back in the thick clump. As it worked towards the edge, he shot. We spent three-quarters of an hour in fruitless search among the close-growing willows, and then gave it up. Though the record is unfortunately not complete, it is none the less positive.

Certhia familiaris americana.—Two singing Brown Creepers observed along West River, Yates County on June 3, 1906, would seem to indicate a strong probability that this bird breeds there.

Poliophtila cærulea.—On April 25, 1906, I observed a female Blue-gray Gnatcatcher at Canandaigua. It was occupied in catching insects that were about the blossoms of a maple tree on the edge of a swampy woods. After some time in the upper branches it came down to about eye level and worked along the border of the woods. This gave me an excellent opportunity to observe it well. It moved on gradually in a northerly direction as if migrating, but apparently was not with a flock of migrants. There is one other record for Ontario County,—“Canandaigua, June 3, 1886.”

Hylocichla guttata pallasii.—Two Hermit Thrushes in song June 2 and two others June 3, 1906, in the vicinity of West River were recorded by Mr. Antes and me. It would seem that this bird is probably a not rare summer resident in Yates County. “Nest found in Yates Co., May 29, 1898.”—MAURICE C. BLAKE, *Hanover, N. H.*

Notes on the Ornithological Works of John James Audubon.—In ‘The Auk’ for July, 1906, pp. 298–312, Mr. Witmer Stone has given a ‘Bibliography and Nomenclator of the Ornithological Works of John James Audubon,’ and it seems to me desirable to publish some additional notes, which, although apparently well known to some persons, seem to have escaped the press.

About ten years ago Mr. Everett W. Ricker of Boston, who has a considerable knowledge of ornithological books, showed me what he considered a complete set of Audubon’s ‘Ornithological Biography’ which he had picked up from time to time. This set consisted of the original five volumes, Edinburgh edition, two Philadelphia editions of Volume I, and a Boston edition of Volume II. With one exception they were in the original bindings. I have obtained from him the Edinburgh edition and he has kindly loaned me the other volumes.

From comparison of various pages, printers’ signatures, and typography, it is evident that both Philadelphia editions of Volume I are from the same press, and doubtless struck off at the same time. It being reasonable to suppose that in those days, before electrotyping was practiced, the type would not remain set any length of time. These sheets were then bound with slightly different title pages and imprints as follows.

Philadelphia: | Juda Dobson, Agent, 108 Chestnut St: | and |
H. H. Porter, Literary Rooms, 121 Chestnut St. |

MDCCCXXXI

Philadelphia: | E. L. Carey and A. Hart, Chestnut St. |

MDCCCXXXII.

In his Bibliography, ‘Birds of the Colorado Valley,’ Coues, after quoting the Edinburgh edition, says: “This same 1st vol. (other copies) is said to also bear the imprint, ‘Philadelphia, E. L. Carey and A. Hart MDCCCXXXII,’ and to be often missing”; and Leverett M. Loomis in ‘The Auk,’ VIII, April, 1891, page 230, refers to “the Edinburgh edition with the Philadelphia title page, (Philadelphia, E. L. Carey and A. Hart,

MDCCCXXXII).” Both these statements doubtless refer to the reprint with this same title page. A glance at the Edinburgh edition, volume I, will show that it differs widely from the others typographically, particularly noticeable on the title page, introduction and index.

The Boston edition of Volume II seems to have been more generally overlooked. However, Coues mentions it after quoting the Edinburgh Volume II and says, “Other copies said to also bear the imprint ‘Boston, Hilliard, Gray and Company, MDCCCXXXV.’” This issue is a reprint typographically distinct from the Edinburgh Volume II, “Entered according to the Act of Congress in the year 1835 by Victor Gifford Audubon and John Woodhouse Audubon in the Clerk’s office of the District Court of the District of Massachusetts.” It is dated on the title page: Boston | Hilliard, Gray and Company | MDCCCXXXV. The few portions of the text which I have examined are identical with the original.

Perhaps more interesting are the various plates of the Elephant Folio which Mr. Stone has reviewed at length. I have seen from time to time several of these plates, evidently from the original coppers, not numbered and bearing no engraver’s signature but in the lower left-hand corner the words, “Drawn from Nature and Coloured by J. J. Audubon F. R. S., F. L. S.” The plates lettered in this manner which I have personally examined are those of Least Stormy Petrel, California Partridge, Canvas-back Duck, and the one figuring Lazuli Finch, Clay Colored Finch and Oregon Snow Finch. These plates are very finely colored and several persons with whom I have talked that have seen them or similar ones share with me the belief that they were probably used for exhibition purposes — F. B. McKECHNIE, *Ponkapog, Mass.*

RECENT LITERATURE.

Chapman’s ‘The Warblers of North America.’¹ — The North American ‘Wood Warblers,’ or family Mniotiltidae, are here treated monographically from the standpoint of their life-histories, and an attempt is made to set forth our present knowledge of the habits, migrations, breeding and winter ranges of each species and subspecies of this most interesting and attractive family of birds. Each species is illustrated in color from drawings by two of our most skillful bird artists, Fuertes and Horsfall,

¹ The Warblers | of | North America | By | Frank M. Chapman | with the Coöperation of other Ornithologists | With twenty-four, full-page colored plates, illustrating every species, from drawings by Louis Agassiz Fuertes | and Bruce Horsfall, and half-tones | of nests and eggs | [Monogram] New York | D. Appleton & Company | 1907—8vo, pp. i-viii, 1-306, 24 col. pll., 12 half-tone pll. March, 1907. \$3.00.

and the twelve half-tone plates include characteristic nests of eight species, and 122 figures of eggs. The plan and aim of the work and the manner of its preparation are explained in the 'introduction' (pp. 1-6), where also acknowledgments are made to the thirty-six co-workers who have contributed much valuable and hitherto unpublished material. There is a Chapter on 'Migration' (pp. 14-20) by W. W. Cooke, who has also furnished the very extensive migration tables which form an important feature of the book, and also most of the paragraphs on distribution; the chapter on 'The Food of Warblers' (pp. 23-32) is by E. H. Forbush.

The generalities of the subject occupy some thirty pages (pp. 7-36), and treat, under special subheadings, the general characters, plumage, distribution, migration, songs, nesting habits, food, and the mortality of Warblers. The family *Mniotiltidae* is stated to contain approximately 155 species, distributed in summer from Argentina to Labrador and northern Alaska, and in winter restricted mainly to the region south of the southern border of the United States. The distribution and probable origin of each genus is considered in detail, the results of the analysis giving prominence to many facts of special interest. Under 'Mortality among Warblers' the death-rate is shown to be relatively high, due mainly to unfavorable conditions encountered during their long migrations; some species, as the Blackpoll Warbler, rarely breeding south of Canada or wintering north of northern South America. The shortest journey of this species, according to Mr. Cooke, is 3,500 miles, "while those that nest in Alaska have 7,000 miles to travel to their probable winter home in Brazil."

The 55 species and 19 subspecies found north of Mexico are treated in systematic sequence, after the following method: (1) the A. O. U. Check-List English and technical names; (2) distinguishing characters of male, female, and young, both in spring and fall (briefly but discriminatively presented, and printed in small type); (3) general distribution; (4) summer range; (5) winter range; (6) spring migration; (7) fall migration (with migration tables under each); (8) the bird and its haunts; (9) song; (10) nesting site; (11) nest; (12) eggs; (13) nesting dates; (14) bibliographical references (as cited in the text). The work is thus so detailed and so methodically arranged that any desired topic is readily found. The bibliographical references relate mainly to special articles treating of the habits of the species in question, mostly of recent date, in scientific journals and magazines; the quotations are in the exact words of the author, and are not paraphrases; and specially contributed matter is duly indicated and accredited. The author has been able to draw largely from his own personal knowledge, and little is omitted that could be useful to the reader. Although non-technical, the matter is scientifically all that could be demanded, and is thus not only adapted to the amateur, but is a source of information for the expert. In view of the 124 colored figures, analytical keys are deemed unnecessary. The colored plates have already, been published in 'Bird Lore,' where most of the migration matter also originally appeared, but otherwise the work is wholly new.

Taken all in all, 'The Warblers of North America' reaches a high standard of excellence, and sets a model future writers may well emulate. The many excellent colored figures of the birds and beautiful half-tones of nests and eggs admirably supplement the carefully prepared text.—J. A. A.

Alphéraky's 'The Geese of Europe and Asia.'—In the present work¹ are described and figured all of the known species and subspecies of Palearctic Geese, twenty-two in number. The work was originally published in Russian, in 1904, under the title 'Gusi Rossii,' and it is now most welcome in its English dress. The author has evidently enjoyed great opportunities, both in the field and in the amount of material open to him for investigation, as a preparation for the present work, with which he expresses dissatisfaction, inasmuch as he has failed to realize his ideal in respect to its completeness and finality. Yet it is a most important contribution to our knowledge of an imperfectly known field in ornithology.

The generalities of the subject, given in the introduction, are followed by an elaborate key to the genera, species and subspecies, and this by the systematic descriptions, two appendices, and the index. The descriptions of the species, including the various plumages, are very detailed, the bibliographical references are very full, especially to Russian authors, and the geographical distribution and biographies appear to be worked out with great care and thoroughness. The work thus abounds with exceedingly valuable information, not elsewhere given in such connected and convenient form. The author believes Buturlin's subgenus *Melanonyx* to be worthy of generic recognition, and adopts it for the Bean Goose group; he is also liberal in his recognition of species and subspecies, and thus is very attentive to technical details, which adds value to his work, whether or not all his conclusions are accepted. His recognition of differences resulting from age and individual differentiation tend to give confidence in his estimate of the value of differences he ascribes to other causes.

Appendix I is a valuable paper by Mr. G. F. Göbel on the Eggs of Russian Geese, which Mr. Alphéraky says "affords the only satisfactory basis for further oölogical investigations in the subfamily Anserinæ," and deals with the structure of the shell as well as with the color and size of the egg. Tables of the weight (of the shell), the breadth and length of the eggs of the Anserinæ are given as an important aid in determining the species.

¹ The Geese of Europe and Asia being a Description of most of the Old World Species | By | Sergius Alphéraky | Corresponding Member of the Zoological Section of the Imperial Academy of Science, St. Petersburg; | Hon. Member of the Russian Entomological Society; Member of the Imperial Russian Geographical Society, etc., etc. | With twenty-four coloured plates by F. W. Frohawk | F. E. S., M. B. O. U. | and | frontispiece by Dr. P. P. Sushkin | London: Rowland Ward, Ltd. | "The Jungle," Piccadilly | M C M. V—4to, pp. i-ix, 1-198, col. frontispiece, 24 col. pll., and 16 text figures.

Appendix II is an 'Extract from the Diary of the Visit to Kolguev in 1902 of Mr. S. A. Buturlin,' and contains much interesting information respecting not only the geese of this far-off locality but of its abundant and varied bird life.

Mr. Frohawk's excellent colored plates of the Geese and their bills (three plates of bills) adds greatly to the value and beauty of Mr. Alphéraky's exceedingly important monograph, of interest alike to the ornithologist and the sportsman, and which will long remain a standard source of information on the subject to which it relates.—J. A. A.

Oberholser on Birds from East Africa.¹—About 26 species or subspecies are here listed, with critical comment on most of them. One subspecies is described as new. The comparisons are mainly of Mombara birds with others from Taveta and Mount Kilimanjaro.—J. A. A.

Schiebel on the Phylogeny of the Species of Lanius.—This is an attempt, as explained in the title,² to trace back to a common origin the various species of Shrikes, of which some forty or more species are currently recognized, besides numerous subspecies, by means of coloration resemblances—the pattern of coloration and color, and the coloration of the young in relation to that of the adults. The species can be arranged in sequence, or series, along about seven principal lines, which seem to converge toward a common or ancestral type. Coincidence of certain phases of coloration with particular geographic regions is an interesting feature here brought out. The phylogenetically oldest type, or his 'Typus primitivus,' is found in eastern and Central Asia, and is separable into two groups of species. His 'Typus excubitoriformis' occupies northern Europe, northern Asia, and northern North America. To the west and southwest his 'Typus primitivus' merges into his 'Typus indo-malayicus,' and this again, further south and west, into a 'Typus africanus,' separable into three minor groups.

The subject is discussed in great detail and abounds in points of interest. It is illustrated with eight plates, the first being in black and white to show details of pattern in feather markings; the others are in color, for comparison of pattern and tints in the different groups of species, some thirty species being illustrated by about forty figures, drawn from the side, from cabinet skins, for effective and convenient comparison.—J. A. A.

¹ Notes on Birds from German and British East Africa, By Harry C. Oberholser, Assistant Ornithologist, Depart. of Agriculture. Proc. U. S. Nat. Mus., Vol. XXX, 1906, pp. 801-811.

² Die Phylogenie der Lanius Arten, Untersuchungen über die gegenseitige Abstammung sämtlicher Arten der echten Würger auf Grund der Zeichnungsentwicklung der Federkleides. Von Dr. Phil. Guido Schiebel. Journ. für Ornithol., 1900, pp. 1-77 und 161-219, mit 7 farbigen und 1 Schwarzdruck-Tafel und 2 Skizzen im Text. Also separate, Price 8 marks.

Hellmayr on the Types of Little-known Neotropical Birds.¹—The author, in collecting material for his proposed work on the 'Birds of Brazil,' soon found that in order to clear up the uncertainty of nomenclature existing respecting many of the species it would be necessary to examine the original types. "Thus," he says, "during the last four years, I have carefully examined a great number of types in various museums of Europe, and I intend to publish the results of these studies in a series of papers of which this is the first instalment." During the last two years several other papers on the same general subject have already appeared, some of which have been noticed in this journal. In the present paper 64 species are critically considered, in connection with which many nomenclatorial questions are discussed, often involving the detailed revision of specific groups, and new allocations of names. A list of the species treated is given at the end of the paper, showing at a glance the results reached. Dr. Hellmayr's researches in this field are most opportune and should receive cordial welcome.—J. A. A.

Hellmayr on the Birds of Pará, Brazil.—These 'Notes'² relate to a collection of birds received at the Tring Museum from Mr. W. Hoffmanns numbering "420 specimens, representing 120 species, of which no less than 21 are new to the fauna of Pará," while four are new to science, and others represent species previously known only from single specimens. Besides the localities, dates of collecting, and a transcript of the collector's notes on the color of the iris and soft parts, many technical and nomenclatorial notes are also included.—J. A. A.

Wood's Twenty-five Years of Bird Migration at Ann Arbor, Michigan.³—The area is the immediate vicinity of Ann Arbor, and the period, 1880 to 1905, inclusive; the number of species is 267. "The list includes all the species observed in this vicinity, and the record for each species shows whether it is common or rare." The main list forms a sheet 15½ by 28½ inches, and is entitled 'Table of First Arrivals.' Two other tabulations are 'Table of Migration Waves,' and 'Table of Species occurring on more than one Wave.' The period of greatest migration occurs the last week in April and the first week in May. The hardier birds, which arrive early, "do not come at a stated time each year, but are governed in their migration to a certain extent by favorable weather and food conditions." The later migrants tend to arrive at about the same time each year, and appear

¹ Critical Notes on the Types of Little-known Species of Neotropical Birds. By C. E. Hellmayr. Part I. *Novitates Zoologicae*, Vol. XIII, July, 1906, pp. 305-352.

² Notes on a Second Collection of Birds from the District of Pará, Brazil. By C. E. Hellmayr. *Nov. Zool.*, Vol. XIII, July, 1906, pp. 353-385.

³ Twenty-five Years of Bird Migration at Ann Arbor, Michigan. By Norman A. Wood. Eighth Annual Report of the Michigan Academy of Science, pp. 151-156, and large folding table.

to be little influenced by weather conditions. Many species arrive with great regularity, irrespective of bird waves. It is believed that through study of weather maps 'bird waves' can be predicted with some certainty.—J. A. A.

Montgomery's 'The Protection of Our Native Birds.'¹—This admirable essay considers, successively, (1) the reason for protection, (2) data on the destruction of birds, and (3) the means for their protection. Under these several divisions the author summarizes the leading features of the subject, especially the value of birds to agriculture. Among the means for the protection of birds, he urges emphatically "the spread of accurate knowledge concerning the practical value of the birds, and especially among farmers. . . . Common-sense talks before farmers' granges and before the meetings of ranchmen may prove more efficacious than printed matter," inasmuch as the bulletins prepared by experts seem rarely to reach the farmers, "being consigned to the waste paper baskets of congressmen." The wide distribution of this important presentation of the subject among the people of Texas should result in much good.—J. A. A.

Oberholser's 'The North American Eagles and their Economic Relations.'²—This is a summary of the distribution and life histories of the Bald Eagle (*Haliaeetus leucocephalus*) and the Golden Eagle (*Aquila chrysaetos*) with a brief allusion to the Gray Sea Eagle (*Haliaeetus albicilla*), which has in North America only a very limited range, being found, so far as known, only in Greenland, on the shores of Cumberland Sound, and on Unalaska Island. The food habits of both the Bald Eagle and the Golden Eagle are considered at length; the former being regarded as "rather more beneficial than otherwise," and the latter as "on the whole more harmful than beneficial." Each species is illustrated by a plate, and the breeding range of each is shown by means of two maps.—J. A. A.

Cooke's the Distribution and Migration of North American Ducks, Geese, and Swans.'³—Sixty-four species and subspecies of ducks, geese and swans are stated to occur in North America north of Mexico, of which 24 breed in the United States. Five of the latter are confined to the southern border of the United States and range thence southward, leaving 19 as regular and more or less common breeders over portions of the

¹ The Protection of Our Native Birds. By Thos. H. Montgomery, Jr., Professor of Zoölogy, University of Texas. Bull. University of Texas, No. 79; Scientific Series No. 6, 8vo, pp. 30.

² The North American Eagles and their Economic Relations. By Harry C. Oberholser, Assistant Ornithologist, Biological Survey. Biological Survey, Bull. No. 27—8vo, pp. 31, 2 pll. and 2 text figures, 1906.

³ Distribution and Migration of North American Ducks, Geese, and Swans. By Wells W. Cooke, Assistant, Biological Survey. Biological Survey, Bulletin No. 26, 8vo, pp. 90. 1906.

United States. These are the species that have shown the most marked decrease in recent years, and which, therefore, stand most in need of protection. This investigation was undertaken for the purpose of furnishing information as to present ranges, relative abundance, and migration, with reference to practical legislation. The first part of this valuable report is devoted to a consideration of the extent and causes of the recent decrease in numbers of these useful birds, and the suggestion of measures for their better protection. The absolute prohibition of spring shooting in every part of the country is strongly urged as necessary for the preservation of these species for the benefit of future generations. Then follows a list of species that winter principally in the United States, and a list of those that winter both in the United States and Canada. It is stated that 54 species regularly visit the United States during some portion of the year.

Following this preliminary matter, the species are taken up in systematic sequence, with reference to their breeding ranges, their winter ranges, their seasons and routes of migration. The basis for determining the ranges consists of published records, data derived from museum specimens, and the unpublished notes of the field agents of the Biological Survey. "The data on migration are derived almost entirely from the migration schedules contributed since 1884 to this Bureau by hundreds of observers distributed throughout the United States and Canada." It thus follows that a vast amount of hitherto unpublished information on the ranges and migrations of the Anatidæ is here for the first time available. The paper is thus, aside from its great economic importance, a valuable contribution to ornithology.—J. A. A.

Ward's 'Notes on the Herring Gull and the Caspian Tern.'¹—This is an account of two visits (in 1905 and 1906) to a large breeding colony of Herring Gulls and Caspian Terns at Gravel Island, at the northern end of Door County peninsula, Wisconsin, and contains many interesting observations on the manner of nesting and other matters connected with the home life of these species. The first season many young gulls were found dead on the beach, and the cause of their death was not easy to explain. On the second visit it was found that the old birds deliberately maltreated certain of the young birds, mortally wounding them. "The habit of killing the young," he says, "appears to be fairly common," but he is quite unable to account for such strange acts, which he repeatedly witnessed. "I was quite unable to see," he adds, "that the victims of these attacks were in any way abnormal, or that they had given any offense. . . . Rapid movement seemed always to excite the adults and a running young one was sure to be attacked by every adult near which it passed, but

¹ Notes on the Herring Gull and the Caspian Tern (*Larus argentatus* and *Sterna caspia*). By Henry L. Ward. Bull. Wisconsin Nat. Hist. Soc., Vol. IV, No. 4, October, 1906, pp. 113-134, with 2 plates.

these attacks that came under my observation consisted only of a few jabs of the beak on any part of the body, and none ended seriously." Two half-tone plates give four illustrations of scenes in gull life.—J. A. A.

Game Laws for 1906.¹—This is the usual annual summary of the game laws revised and brought down to date, so as to include not only all the new legislation, but a summary of the more important bills which were considered and failed to pass. It is a condensed statement of the game laws of the United States and Canada, which govern seasons, shipment, sale, licenses, and other limitations, and is of the greatest interest and use to both game protectors and sportsmen, as well as to shippers and dealers in game. The legislation during 1906 was especially important in the Canadian Provinces, five of which passed new game laws, Alberta passing a law prohibiting spring shooting of water fowl. "The passage of the Mississippi statute marks the completion of a chain of nonexport laws in every State of the Union and provision for the appointment of special officers to enforce the game laws in every State except Alabama, Arkansas, and Texas." Several new preserves were established by Congress, and other preserves were made in the Provinces of Alberta and Quebec. Thus is progress made from year to year in the preservation of game almost throughout the continent.—J. A. A.

Forbush's 'Useful Birds and their Protection.'—In this volume² of over 450 pages, with numerous illustrations, we have set before us, by authorization of the Legislature of Massachusetts, one of the most important works yet published relating to the economic relations and protection of birds. By predilection, temperament, opportunities, and familiarity with his subject, the author is well fitted to deal fairly and exhaustively with the important topic here considered—the food relations of birds to agriculture, and hence the utility of birds to man. An introduction of 22 pages deals in a general way with 'The Utility of Birds in Nature,' while the succeeding twelve chapters treat of different phases of the general subject, and with the enemies of birds, and means for their protection. The chapter headings may here be cited as indicating the scope and general character of the work, as follows: 1. The Value of Birds

¹ Game Laws for 1906. A Summary of the provisions relating to seasons, shipment, sale, and licenses. By T. S. Palmer and R. W. Williams, Jr., Assistants, Biological Survey. U. S. Department of Agriculture. Farmers' Bulletin No. 265, 8vo, pp. 54, with maps and tables. Washington Government Printing Office, 1906.

² Useful Birds and their Protection. Containing Brief Descriptions of the more common and useful Species of Massachusetts, with Accounts of their Food Habits, and a Chapter on the Means of Attracting and Protecting Birds. By Edward Howe Forbush, Ornithologist to the Massachusetts State Board of Agriculture. Illustrated by the Author, C. Allan Lyford, Chester A. Reed, and others. Published under Direction of the Massachusetts State Board of Agriculture, by authority of the Legislature.—No date. 8vo, pp. i-xx, 1-437, with 171 text figures, colored frontispiece, and 56 half-tone plates. (Received March 18, 1907.)

to Man; II. The Utility of Birds in Woodlands; III. Birds as Destroyers of Hairy Caterpillars and Plant Lice; IV. The Economic Service of Birds in the Orchard; V. Song Birds of Orchard and Woodland; VI. Songless Birds of Orchard and Woodland; VII. The Utility of Birds in Field and Garden; VIII. Birds of Field and Garden; IX. Birds of the Air; X. Birds of Marsh and Waterside; XI. Checks upon the Increase of Useful Birds; XII. The Protection of Birds.

Chapters I to IV treat of the loss due to insect ravages; the increase and multiplicity of these pests, and their destruction by birds; their increase with the decrease of birds, the utility of birds in the protection of forests, and their "aesthetic, sentimental, and educational value." Chapters V to X take up the various useful birds specifically, giving a short description of each as a means for their identification, and setting forth the rôle each plays in the scheme of nature. In Chapter XI are detailed the various checks upon the increase of birds, including their natural enemies and their destruction by man and the bird enemies introduced by him, as the domestic cat and the House Sparrow. Chapter XII, on the protection of birds, gives instruction as to methods of attracting birds to take up their abodes in cultivated grounds and about our houses, for supplying them with food and nesting facilities, and how to protect crops from such otherwise useful birds as sometimes levy toll on our fruit or grain. There is also something about the artificial propagation of game birds, about the associations organized for the protection of birds, with the names and addresses of their principal officers, and also a bibliography of papers on ornithology published by the Massachusetts State Board of Agriculture from 1861 to date. The text illustrations relate mainly to insect pests (many of which are figured), to their ravages, and to particular species of birds which prey upon destructive insects. The frontispiece is a colored plate, by Fuertes, of the Wood Duck — a species rapidly approaching extinction; the half-tone plates, largely from photographs, illustrate the destructiveness of insects to forests, insect-feeding birds, bird houses and nesting boxes, and other pertinent subjects. Many of these are from published sources, duly acknowledged, but a large number appear here for the first time.

Besides the author's many years of personal field experience in connection with the Gypsy Moth Commission, and in other relations, he has drawn material from the best published sources, as the reports of investigations under the U. S. Department of Agriculture, in relation both to the destructive work of insects upon crops and forests and the utility of birds as insect destroyers, and has utilized the hitherto unpublished reports of two of his field assistants, thus rendering the work an important contribution of new matter to the subject treated. It remains to add that the State Board of Agriculture and the State Legislature of Massachusetts have shown commendable foresight and liberality in authorizing the publication and distribution of an edition of 5000 copies of this valuable exposition of the relation of birds to man's economic interests.— J. A. A.

Dionne's Birds of the Province of Quebec.¹—In 1883, Professor Dionne published in French a volume on the Birds of Canada, having, however, special reference to those of the Province of Quebec. It was, and remained till now, the only systematic work in French treating of the birds of this region. As it has long been out of print, the author has wisely decided to bring out a new work restricted to the birds of this Province, in the form of a popular handbook, with a view to promoting a better general knowledge of the birds of this ornithologically neglected Province. As the author says, little has as yet been done towards making known the local distribution of the birds of this Province, which remains still to a large extent an unexplored field.

Following an introduction of ten pages, the species are taken up in systematic sequence, following the order and the nomenclature of the A. O. U. Check-List, even to the revisions of its latest supplements. Diagnoses are given of the genera and the higher groups, with keys to the latter and descriptions of the external characters of the species and subspecies, followed by biographies, sometimes extending to several pages. The plates furnish half-tone figures of about fifty species (mostly from well-known sources) and there are a number of text cuts. All in all, the 'Birds of the Province of Quebec' is well adapted to meet the great need for a popular handbook, in the French language, of the birds of eastern Canada.—J. A. A.

Clark's Birds of Amherst, Massachusetts.²—The first edition of this little work was published in 1887, and was reviewed in this journal, Volume V, 1888, pp. 105, 106. The number of species then recorded was 179, to which 7 are now added, making 186. The first edition having been long out of print, the present one has been prepared to meet the continued demand for copies. It differs from the former edition in having the species follow each other in a single series, instead of being arranged in three series, in accordance with whether they are of regular, irregular, or of extremely rare occurrence. The 'artificial key' has been rearranged, and a 'field key' added; as already noted seven species are added, and some additions are made to the field notes relating to other species, particularly with

¹ Les Oiseaux de la Province de Québec par C.-E. Dionne | Maître-ès Arts, Conservateur du Musée Zoologique de l'Université Laval, | Membre associé de l' "American Ornithologists Union," de la "National Geographic Society" Washington, etc. Auteur de "Les Oiseaux du Canada," du "Catalogue (annoté) des Oiseaux de la Province de Québec," de "Les Mammifères de la Province de Québec" (Vignette) Québec | Dessault & Proulx | 1896—8vo, pp. i-viii, 1-415, 8 half-tone plates, and 21 text cuts.

² Second Edition: Revised and Rewritten. |—| The Birds of Amherst and Vicinity, | including nearly the whole of Hampshire County | Massachusetts. |—| Hubert Lyman Clark. | With an Introduction by | Professor Charles H. Fernald, Ph. D. |—| Amherst: Massachusetts: | Press of Carpenter & Morehouse. | 1906.—8vo, pp. 96+41l. not paged.

reference to the date of arrival in spring. The purpose of the list, aside from its faunistic value, is to aid local observers in their field studies of birds.—J. A. A.

Cole on Birds from Yucatan.¹—The collections forming the basis of the present paper were made at Chichen-Itza, Yucatan, by Mr. Cole, from February 13 to April 9, 1904, the observation and collection of birds being "rather incidental to the other collecting." The present list is intended "to include every species of bird known to have been definitely reported from Chichen-Itza," and numbers 128 species. The list is based on four sources of information: (1) birds collected by the author; (2) easily recognizable birds (2 in number) added on the authority of Mr. E. H. Thompson, U. S. Consul, owner of a large plantation at Chichen-Itza; (3) a collection of skins (84 specimens, representing 53 species) made by Mr. Thompson in the early nineties; (4) records from other sources, including Mr. F. M. Chapman's list² of 74 species, obtained by him at Chichen-Itza in March, 1896. This is an increase of 54 over Mr. Chapman's list, while 10 of those listed by Mr. Chapman are here given on his authority. A supplemental list of 13 species is given of birds collected or observed elsewhere in Yucatan, not yet reported from Chichen-Itza.

The annotations include, besides the usual field notes, the Maya names, and reports, in the case of a number of species, on the contents of stomachs by Mr. F. S. Millspaw. *Otus choliba thompsoni* is described as new. While *Otus* seems properly to replace *Megascops*, the use of *Asio* in place of *Bubo*, as here and by other writers who are ambitious to be up to date in names, is a little premature, a recent decision on these names by the A. O. U. Nomenclature Committee being to the effect that *Bubo* and *Asio* are entitled to their time-honored associations. Mr. Coles's list is an excellent summary of our present knowledge of the bird-life of Chichen-Itza.—J. A. A.

Proceedings of the Delaware Valley Ornithological Club.—'Cassinia, a Bird Annual,'³ contains, as usual, much of interest relating to the ornithology of Pennsylvania and New Jersey. The opening paper (pp. 1-9) is a biographical sketch of William Bartram, by George Spencer Morris, illustrated with a portrait of Bartram, and a drawing of 'The Bartram House, Bartram's Garden, Philadelphia,' by the author of the paper.

¹ Vertebrata from Yucatan. Introduction and Aves, by Leon J. Cole; Mammalia, by Glover M. Allen; Reptilia, Amphibia, Pices, by Leon J. Cole and Thomas Barbour. Bull. Mus. Comp. Zool. at Harvard College, Vol. L, No. 5, pp. 100-159, pll. 1, 2, November, 1906. Birds, pp. 109-146.

² Bull. Am. Mus. Nat. Hist., VII, 1896, pp. 271-290.

³ Cassinia, A Bird Annual. Proceedings of the Delaware Valley Ornithological Club of Philadelphia, 1906. Issued February, 1907. 8vo, pp. 76, frontispiece and 1 half-tone plate.

Other articles are 'A Study of the Solitary Vireo,' by Cornelius Weygandt (pp. 10-15); 'Summer Birds of Western Pike County, Pennsylvania,' by Richard C. Harlow (pp. 16-25); 'The Concordville Robin and Grackle Roost,' by Samuel C. Palmer (pp. 26-29); 'A June Trip to Pocono Lake, Monroe County, Pennsylvania,' by John D. Carter (pp. 30-34); 'Winter Bird Life in the Pocono Mountains, Pennsylvania,' by William L. Bailly (pp. 35-39); 'Report of the Spring Migration of 1906,' compiled by Witmer Stone (pp. 40, 57), arranged in tabular form, and followed by several pages of notes on species not included in the tabular matter. An 'Abstract of Proceedings' (pp. 58-64), a bibliography, 'Bird Club Notes,' and list of officers and members complete this very interesting number. The Club held sixteen meetings during the year, with an average attendance of twenty-four, and a maximum attendance of forty. Few ornithological clubs, if any, in this country can present an equal record of activity and sustained interest in its chosen field as is here reported in 'Cassinia.'—J. A. A.

NOTES AND NEWS.

AUGUST KOCH, an Associate of the American Ornithologists' Union, died suddenly at Mohawk, Florida, Feb. 15, 1907, where he was spending the winter. Mr. Koch was born in Stuttgart, Germany, in 1837, and came to this country with his parents in 1850. His home was at Williamsport, Pa., where he had resided for many years. "As a boy," says 'Forest and Stream' (of March 8, 1907, p. 336), "he was very fond of natural history, and before leaving Stuttgart he had taken lessons in taxidermy from the curator of the Stuttgart Museum. He was an ardent collector of birds, mammals, reptiles, fish and insects up to the time of his death, and was in correspondence with biologists in various parts of America and Europe. A close student of nature, combining manual dexterity with an artistic temperament, the natural history specimens which he mounted were life-like to a degree seldom seen in public collections. He leaves probably the largest, and certainly the finest collection of its kind in Pennsylvania.

"Mr. Koch was an ardent sportsman, a splendid wing shot and a man who had worked out his own code of ethics long before game laws were regarded as of much importance or enforced at all. . . . On the morning of Feb. 15 he was apparently in excellent health, and during the forenoon took a stroll through the woods with his gun. At noon he returned, put away his gun and started to walk across the yard when he was stricken

with cerebral hemorrhage and died instantly. Mr. Koch will be mourned by a wide circle of friends."

Many specimens of rare birds collected by him have found their way to various museums, private and public. He appears to have published little, but it is worth while to call attention to his note, (*Auk*, XVI, 1889, p. 277) on the capture of the Black Seaside Finch (*Ammodramus nigrescens*) near Indianola, Florida, in 1899,—its second record since its original discovery by Mr. Maynard in 1872.

WE REGRET to record that 'The Warbler,' edited and published by Mr. J. L. Childs, Floral Park, N. Y., has been discontinued at the end of the second volume, owing to lack of subscriptions. It contained original matter of scientific value, and was worthy of a better fate. The closing number contains a plate of the nest and eggs of the Blue-throated Hummingbird (*Calligena clemenciae*), and a catalogue (pp. 66-106) of Mr. Childs's ornithological collection, giving all of the species and subspecies of the A. O. U. Check-List, nearly all of which are represented by mounted specimens or by sets of eggs and often by nests. The number and character of the specimens and place and date of collection are indicated by numerals and abbreviations. The rarest species as well as the commoner ones are well represented. The number unrepresented is surprisingly few, showing it to be one of the most complete private collections of mounted North American birds, with their nests and eggs, extant.

ANOTHER popular bird magazine, 'American Ornithology,' published by Charles K. Reed, Worcester, Mass., has also, we regret to say, been forced to suspend publication through insufficient support. Its six volumes are notable for the many excellent half-tone illustrations from nature of birds and their nests and eggs, for its many effective colored plates of North American birds, and much original matter of permanent value.

PROVISION has been made for a Section of Ornithology at the Seventh International Zoölogical Congress, to be held at Boston, August 19 to 25 of the present year. Efforts are being made to induce as many foreign ornithologists as possible to attend the Congress, and it is to be hoped that a large representation of the A. O. U. will be present at the meeting. At this date it is impossible to present any detailed program, but an address will be delivered by a prominent visiting ornithologist, and numerous papers will be presented. All fellows and members of the American Ornithologists' Union are earnestly requested to aid in making the meetings of the Ornithological Section a success, both by their attendance and by presenting papers. Requests for information regarding participation in the Congress, fees, etc., should be addressed to Prof. G. H. Parker, Chairman of the Executive Committee, Cambridge, Mass.; while details of the Ornithological program may be obtained from Mr. Witmer Stone,

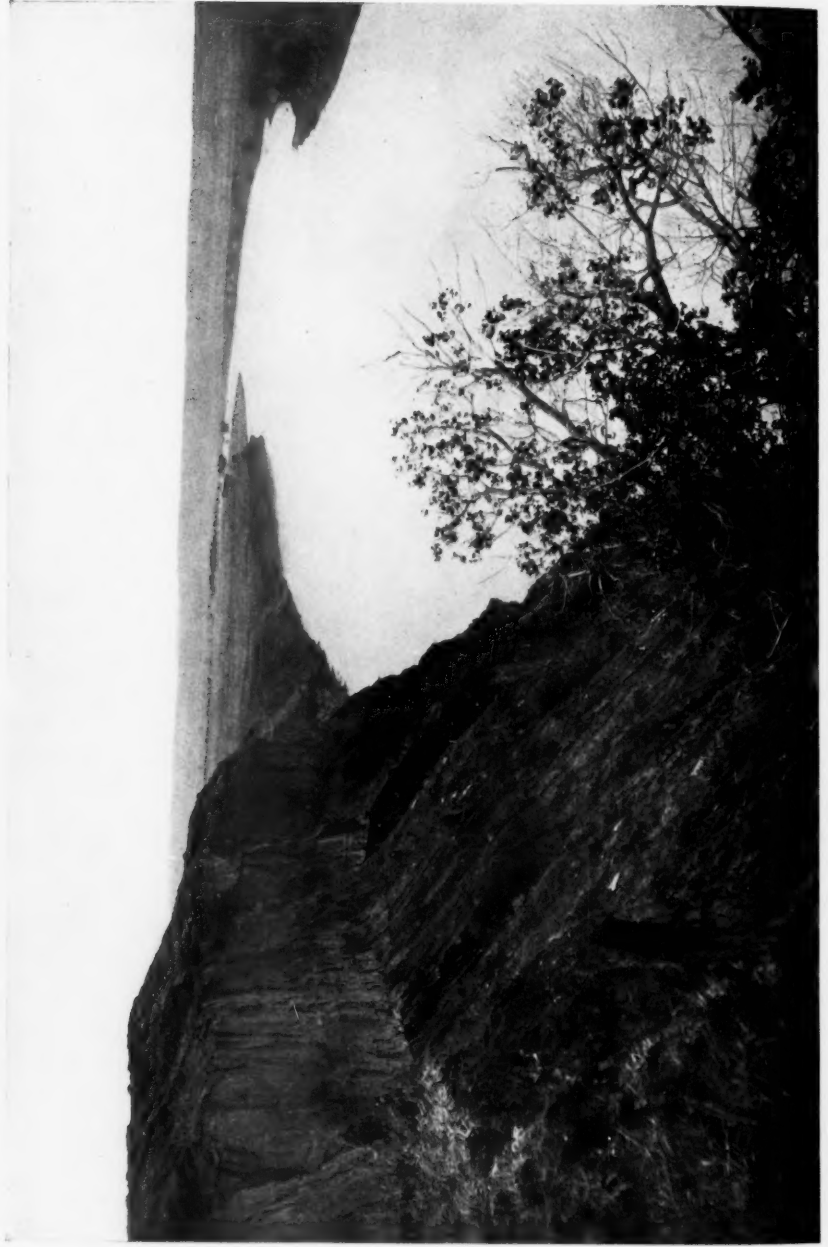
Organization Secretary of the Ornithological Section, Academy of Natural Sciences, Logan Square, Philadelphia.

'THE CONDOR' (IX, p. 29) reports that the California Academy of Science's expedition to the Galapagos Archipelago, which left San Francisco June 28, 1905, returned December 1, 1906, after an absence of seventeen months. The leader of the expedition, Mr. R. H. Beck, regards the collections obtained as by far the most extensive ever made at these much-explored islands. Nearly every branch of natural history is represented, and we await with interest the results of the elaboration of this extensive material by specialists.

THE sixth annual session of the Australian Ornithologists' Union was held at Hobart, Tasmania, Nov. 22 and 23, 1906, after which a visit was made to Launceston, from which point excursions were made and field work conducted during the following eight days. It was voted to hold the next annual meeting in New South Wales. The presidential address, by Colonel C. S. Ryan, had for its subject 'The Protection of Native Birds,' and is given in full in 'The Emu' for January, 1907. It contains a review of legislation in America for bird protections, and concludes with various suggestions for better protection of birds in Australia, and especially urges the introduction of bird study in schools, he believing that "to educate people to love birds is better for their protection than many acts of legislation." He advocates a gun tax, a license fee for collectors, and a small bird for farmers and fruit growers, and others who are practically benefitted by birds, and a heavy tax on game vendors and on all who trade in wild birds or their feathers; these tax returns to be used for the payment of 'rangers' or wardens for the protection of State reserves.

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PLATE V.



NESTING SITE OF DUCK HAWK ON YELLOWSTONE RIVER.